Industrial Equipment News

FOUNDED 1933

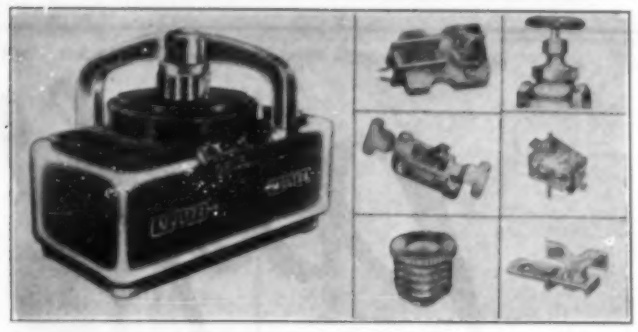
ORIGINAL REPORTER OF *What's New* IN EQUIPMENT, PARTS, MATERIALS

AFFILIATED WITH THOMAS REGISTER OF AMERICAN MANUFACTURERS

If you write maker identify as **IEN-1222**

ASSEMBLING . . Automatic machine for products with multiple components

Source: MULTRA ASSEMBLY MACHINE CO.
Box 966, Dept. IEN, Darien, Conn.



Trade named "Multra"

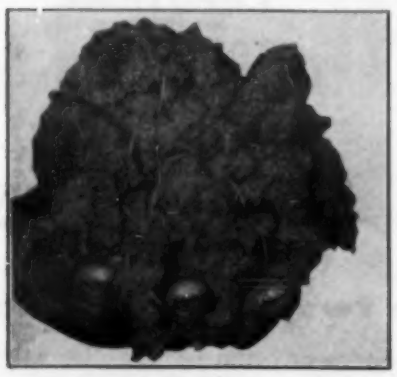
Tiny motors, plug fuses, wall switches, bottle cappers, valves, light sockets, resistors, miniature transmissions, condensers, can openers, all are random examples of products that are being assembled at speeds of 30 to 120 per min. on this new automatic turret type machine. The basic unit, with horizontal table, is shown without tooling in the illustration. A vertical table unit is available also. Table diameter ranges from 10 to 180 inches. Components, to 36 in. in diameter, can be handled.

The machine applies singly or in multiple, making and forwarding parts and sub-assemblies to final assembly, depending on the requirements of a given product. Assembling methods can include, for example, pressing, threading, nut locking, staking, roll forming, expanding, flaring, heading, bending, coiling, lining, painting, printing, welding, brazing, soldering, cementing, plating, counting, numbering, coding, as required by the finished product. Parts and sub-assemblies feed to transfer tables and through the turret stations to finished delivery. The company is prepared to engineer and manufacture the machine and tooling for a given job in 5 to 15 months from date of order, depending on its complexity.

If you write maker identify as **IEN-1223**

WOOD FIBER . . Impregnated stock for product manufacture by molding

Source: FORESTRONG COMPANY
1355 W. 190th St., Dept. IEN, Gardena, Calif.



Details on request

Castwood trade names a new molding material made by processing virgin wood into fibers of controlled size and then impregnating the fiber with a resinous binder. The material is sold as a casting fiber in a variety of fiber sizes with a choice of binders, or blend of binders, at $100 to $200 per ton. It also is available in molding blanks, ready for final operations, without need to pre-form. Two other forms include a high density hard surface wood board and finished molded products for specified purposes.

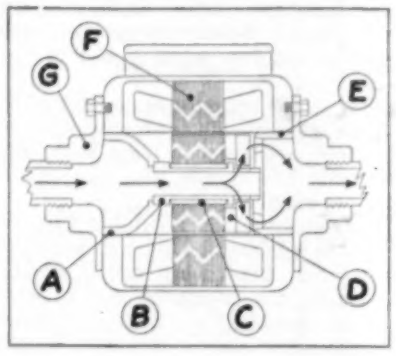
Typical products include cabinets, tool handles, printing plate blocks, platform shoe soles, window frames, balls, bowling pins, mallets, textile picker sticks and a variety of containers for packaging and handling purposes. Molded surfaces are smooth and attractive and can be painted. Structural strength is imparted to the material by the interlaced fibers. These fibers can be seen in the handfull illustrated.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as **IEN-1224**

PUMP . . Motor driven centrifugal has rating of 15 gpm. at 14 ft. head

Source: FOSTORIA PRESSED STEEL CORP.
Dept. IEN, Fostoria, Ohio



Patents are pending

The pumping parts of this new Dynapump are made of stainless steel. The rotor is nickel coated. The steel flanges are nickel plated. The pump is suited, in standard construction, to handle fluids to 210 deg. F. Other models can be supplied to 500 deg. F. Standard installation flanges are for 1-in. pipe support. Standard working pressure is 150 lb. per square inch.

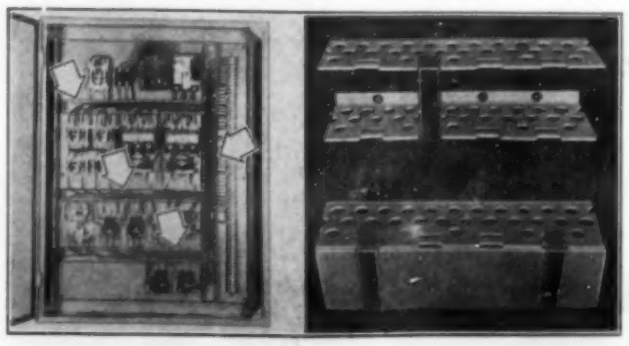
The stainless steel intake sleeve A supports one end of the stainless hollow shaft B. It carries a self-lubricated graphite bearing C on which the rotor with its integral impeller D is mounted. The impeller draws the liquid through radial slots in the tube to pass through openings in a stainless steel diffuser E which supports the delivery end of the tube. These parts are mounted inside of a stainless steel cylinder that acts as a seal to keep liquid from the motor stator F. to which electrical connection is made.

The assembly is completed by gasketed connection flanges as shown at G and at the opposite end of the housing. These flanges are bolted to the main housing on which is a terminal box for the electrical connections. The pump measures 7½ in. in length by 6¼ in. in housing diameter. It accepts interchangeable flanges for ¾ to 1½-in. pipe connections. It can be employed against heads to 24 feet.

If you write maker identify as **IEN-1225**

ELECTRIC DUCT . . Plastic strips make walls and covers in panel wiring

Source: STAHLIN BROTHERS FIBRE WORKS
519 Maple St., Dept. IEN, Belding, Mich.



Illustrated catalog upon request

Panel-Chanel trade names a new standardized formed and perforated phenolic strip, and a companion plain strip, to make the walls and cover of electric duct through which to wire an electric panel. The perforated strip is formed to provide a mounting flange for attachment to the panel.

The perforations are ⅜ in. in diameter for the wiring. Rectangular perforations are on 1 9/16-in. centers to take spring steel clips for the cover strip. Both strips are available in 3, 4 and 6-ft. lengths to be cut or sawed on the job. The wall strip is in 2 and 3-in. heights. The cover strip is in 1, 2, 3 and 4-in. widths in stock sizes.

The plastic is electric grade, moisture free and permanently rigid. It assembles quickly and the finished installation provides a duct for the wiring that eliminates need for lacing and assists in quick circuit checkup.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

FEBRUARY, 1954

VOL. 22 No. 2

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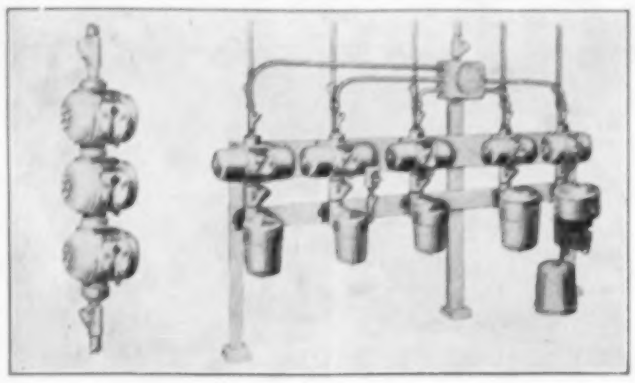
If you write maker identify as **IEN-1226**

CONDUIT . . Unilet fittings for motor control in hazardous places

Source: APPLETON ELECTRIC CO.
1713 Wellington Ave., Dept. IEN, Chicago 13, Ill.



Approved by Underwriters' Laboratories Inc.

Explosion proof, dust tight and rain tight define the construction of a new set of equipment enclosures in the company's Unilet line. Included are Type CB Unilets for circuit breakers, Type LS for line starters and Type CS for combination line starters. Units are provided also for reversing and two-speed line starters under the designations LSR and LSS. The line takes breaker and starter equipment of standard design rated to 225-amp. breaker load and to 100 hp. on 3-phase induction motors on circuits to 600 volts.

Type CB, shown in multiple to the left in the illustration, takes standard makes of circuit breaker on a mounting bracket for quick removal and replacement. Its conduit connections are sufficiently large to run heavy conductors. The external operating handle can be locked "on" or "off" with three padlocks. Operation is trip free when locked in "on" position.

Type LS, shown mounted in the bottom line as part of the combination assembly, takes magnetic motor starting switches for across-the-line duty. Each consists of a main body, interior mounting plate assembly and covers. The unit can be installed for local or remote starter operation.

Type CS consists of an assembly of Type CB and Type LS joined by a Sealing Unilet. The combination takes an air-break circuit breaker and a thermal time delay motor starting switch. It is suitable for polyphase induction motors when across-the-line starting is permissible. No live circuit breaker wires are exposed while the motor starter enclosure is open on a Type-LS assembly.

The company has prepared a new 54-page Bulletin Section 12-A containing illustrated description, specifications, characteristics and prices. It is available on request.

If you write maker identify as **IEN-1227**

CEMENT . . Acid proof material to make floors, sumps, chimneys, tanks

Source: SAUEREISEN CEMENTS CO.
1045 N. Canal St., Dept. IEN, Pittsburgh 15, Pa.

Provides high structural strength

Number 54 is a new concrete cement that is resistant to acids, except hydrofluoric, and that is not subject to attack by water, steam, oil or ordinary solvents. It remains serviceable at temperatures to 2,000 deg. F. The resulting concrete can be poured in place, leveled off as desired and be ready for use in 24 to 48 hours. The cement itself consists of a dry filler to which is added a special binder prior to application.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as **IEN-1228**

For quickly and easily pulling bearings, bushings, and liners on electric motors

. . . use the Duff-Norton remote controlled "Lo-Hite" Hydraulic Jack with detached independent pump. The ram when closed is only 4½ inches high, yet can safely move 30 tons 2 inches in any direction. The independent pumping mechanism is connected to the jacking ram by an 8-foot flexible rubber hose. Safe, sturdy, precision-built for trouble-free service, the "Lo-Hite" is winning new users everywhere.

Write to the world's oldest and largest manufacturer of lifting jacks for Bulletin AD-3M, The Duff-Norton Mfg. Co., P. O. Box 1889, Pittsburgh 30, Pa. Canadian plant—Toronto 6, Ontario.

DUFF-NORTON JACKS

"Giving Industry a Lift Since 1883"

If you write maker identify as **IEN-1229**

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When design calls for **ball** bearings, call in your New Departure sales *engineer*. He's a specialist in solving anti-friction problems. He is backed by complete research and manufacturing facilities.

NOTHING ROLLS LIKE A BALL

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BALL BEARINGS

NEW DEPARTURE • DIVISION OF GENERAL MOTORS • BRISTOL, CONN.

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poof!

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Kidde

Walter Kidde & Company, Inc.
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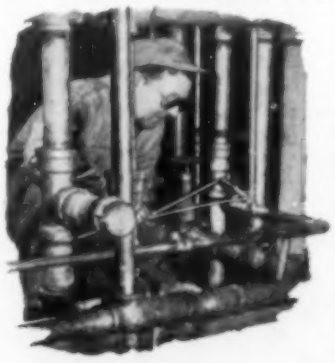
If you write maker identify as **IEN-1231**

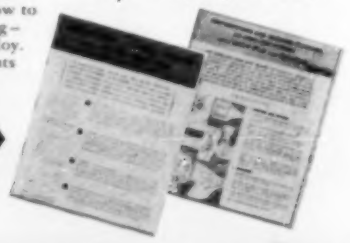


PRACTICAL TORCH BRAZING INSTRUCTIONS

. . . in these two FREE bulletins

These two bulletins give complete step-by-step instructions for brazing fittings to pipe and tubing with the low-temperature silver brazing alloys EASY-FLO and SIL-FOS. They tell – how to cut and fit pipe and tubing – how to clean and flux surfaces to be joined – how to support assemblies for brazing – how to heat and apply the alloy. They cover the making of joints in vertical up, vertical down and horizontal positions.

Here is useful information for anyone and everyone interested in knowing how to make strong, permanently leak-tight joints in piping and tubing with the oxyacetylene torch.



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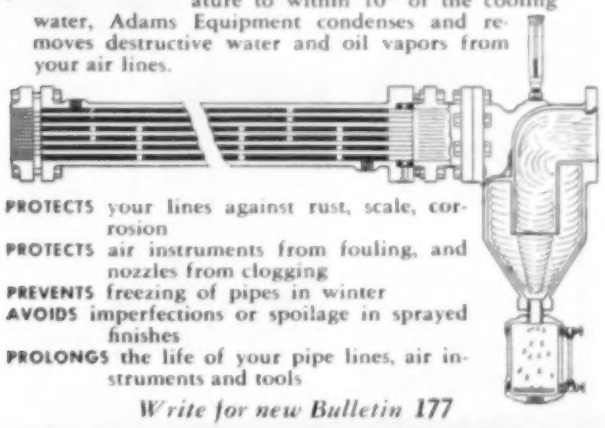
You Can be Sure of Clean Dry Air for your Compressed Air Tools

3500 Gallons

1 YEAR'S water extraction from air lines equipped with Adams Aftercooler and Cyclone Separator.

with **ADAMS** Aftercooler and Cyclone Separator

● Reducing compressed air temperature to within 10° of the cooling water, Adams Equipment condenses and removes destructive water and oil vapors from your air lines.



PROTECTS your lines against rust, scale, corrosion
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AVOIDS imperfections or spoilage in sprayed finishes
PROLONGS the life of your pipe lines, air instruments and tools

Write for new Bulletin 177

R.P. ADAMS CO., INC. 219 E. PARK DRIVE BUFFALO 17, N. Y.

If you write maker identify as IEN - 1233

securityflex* saves money...

and because of its strength, toughness, and wear-resistant properties, this heavy-duty portable cord needs fewer replacements—lowers maintenance costs.

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the right cable for the job

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Now Available: 2, 3 and 4 "B" Groove.
7.0 to 18.4 Pitch Diameter.
Bores ½" to 1¾" using Malleable Split Taper Bushings.

Less Weight . . . Lower Cost.

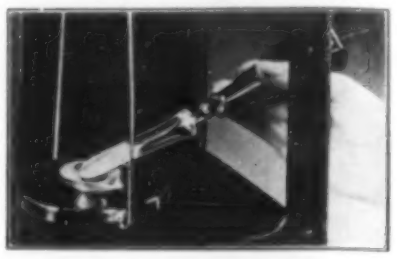
WRITE FOR DESCRIPTIVE BULLETIN, FORM 1986

BROWNING MANUFACTURING COMPANY MAYSVILLE · · · KENTUCKY

If you write maker identify as IEN - 1235

FEEDING . . Vibrating spatula delivers granules at controlled rate

Source: FISHER SCIENTIFIC CO.
717 Forbes St., Dept. IEN, Pittsburgh 19, Pa.



$12.50

Miniature motor is enclosed with a vibrating mechanism in the handle of this new Vibro-Spatula. The motor is controlled by a push button switch also in the handle. Granular powder or crystalline materials can be picked up on the stainless-steel blade and delivered at any desired speed, steadily and under instant control.

The motor operates on 110-volt ac. It imparts vibrations to the stainless-steel spade end at 60 cps. The unit was particularly designed for use in weighing operations in a laboratory. It is suited to feed small amounts of granular materials for any purpose requiring a controlled rate.

If you write maker identify as IEN - 1236

TUMBLING . . Finishing compound imparts luster and color to the work

Source: MINNESOTA MINING & MFG. CO.
900 Fauquier St., Dept. IEN, St. Paul 6, Minn.

Demonstration upon request

Honite brand Multi-Burnish is a new compound suited for use with any type of barrel finishing media. The compound starts as an effective cleaner and permits rapid deburring of the work. It then develops progressively richer suds. They act as a lubricant and as a suspending agent to impart luster and color to the work.

The compound can be employed on aluminum, bronze, manganese, mild and stainless steel, zinc. It operates equally well with steel balls, natural stones or aluminum oxide barrel finishing chips. One to two pounds of the soluble compound are sufficient for a 16 by 30-in. tumbling compartment with a full load. Packaging is in 100-lb. containers.

If you write maker identify as IEN - 1237

HANDLING . . Plastic tote tray molded in one piece, weighs 4 pounds

Source: SAMUEL OLSON MFG. CO.
2418 Bloomingdale Ave., Dept. IEN, Chicago 47, Ill.

Literature on request

New tote tray is water proof, grease proof, easy to clean, odorless and warm to touch. It is resistant to abrasion, shock contact. Its corners are rounded inside and out. Rolled edges provide a comfortable hand grip. Two sizes measure about 14 by 18 by 5 in. and 16 by 21 by 5 inches.

All Makers of These And All Other Products Are Listed in THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 1238

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Porcelain Enamel Signs!

- ATTRACTIVE
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A complete line of Signs for every industrial need. Stock wordings for warnings, safe practice reminders and general plant notices . . . SPECIAL SIGNS TO ORDER.

Write for Bulletin No. 45

IPCO

IPCO *Safety Equipment for all Industries*
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"This Lubricant Extended Bearing Life 50%"

Republic Aviation Corp. further states, "*It was also found that, during test, LUBRIPLATE increased efficiency of machines twenty per cent by reducing friction loss. Republic has been using LUBRIPLATE Lubricants successfully for the past eight years.*"

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Write today for case histories of savings made through the use of LUBRIPLATE in your industry.

LUBRIPLATE DIVISION
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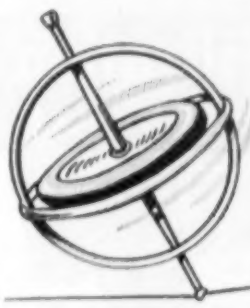
The Different LUBRICANT!

DEALERS EVERYWHERE, consult your Classified Telephone Book

If you write maker identify as IEN - 1240



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Perfect balance makes Push Button CASTELL LOCKTITE Holder the king of its class.

Exclusive collet holds lead in **bull dog grip,** preventing slipping or turning.

No graphite dust stains your fingers—because with one-hand push-button action you extend and retract the lead. *No need to touch graphite.* Comfortable "wood-pencil" feel—not metallic.

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Imported CASTELL 9030 Lead inserted in your LOCKTITE Holder gives you the combination for brilliant results on your drawing board. Ask your Dealer for both—LOCKTITE Holder and Imported CASTELL 9030 Lead in 19 degrees, 7B to 10H.

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PENCIL COMPANY, INC., NEWARK 3, N. J.

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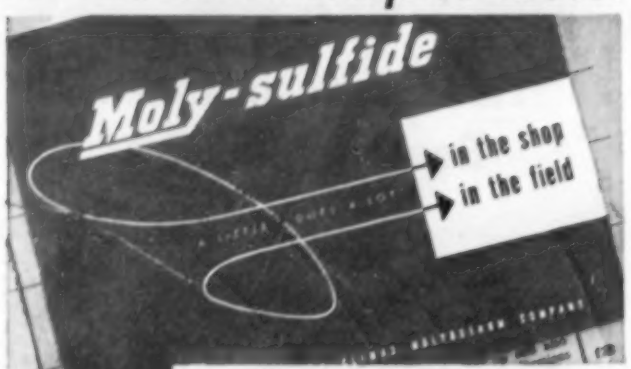
154 ideas on ways to use...



154 varied applications of molybdenum sulfide in the shop and in the field are described in a new booklet now available. This solid-film lubricant has demonstrated unique anti-friction properties under conditions of extreme pressure, high velocity, elevated temperature, or chemical attack.

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Moly-sulfide
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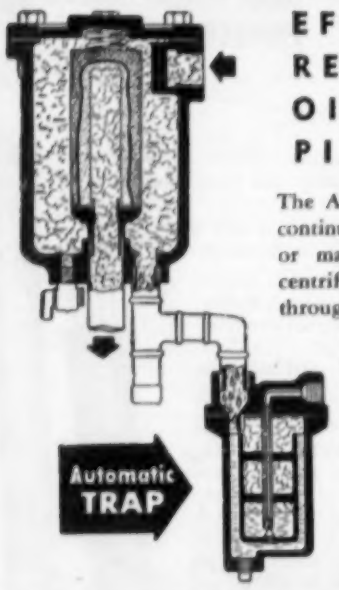
The lubricant for extreme conditions

MS-6A

Climax Molybdenum Company
500 Fifth Avenue, New York City 36, N.Y.

If you write maker identify as IEN - 1243

Poro-Stone Filtration FOR COMPRESSED AIR



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The Adams *Poro-Stone* Filter gives continuous service without attention or maintenance expense. Efficient centrifugal separation *plus* diffusion through Poro-Stone, removes contamination completely without pressure loss. Automatic Trap eliminates attention and assures continuous and efficient filter operations.

Write for complete data Bulletin 177

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219 E. Park Drive, Buffalo 17, N. Y.

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brass steam cocks

125 and 250-POUND WORKING PRESSURES

Get your brass steam cocks from Crane and be sure of smooth operation with positive closure.

Big selection in the 125-Pound Class—two, three and four-way; square, flat and tee head; with and without check. Sizes up to 2-inch.

Extra strong 250-Pound steam cock of Crane Special Brass available only in two-way pattern with square head. Sizes up to 2-inch.

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Industrial Equipment News

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CCA SBME NBP

VOL. 22 FEBRUARY, 1954 No. 2

Just Suppose

Just suppose that the Big Boss, whoever he may be in your company, were to call you all together and make a statement and a request like this—

"We are heading into a period of competitive selling. It is essential that we collect and study every suggestion that will help to advertise and to sell our products. I am asking each of you to put your suggestions on paper and give them to me. Feel free to consider any phase of our operations from our plant setup to the design of the products we make."

Here might be a wonderful opportunity to bring out in the open the idea you have been nursing for a long time. Nearly everyone has one or more such ideas on doing a job, or designing a part, or making a complete production of plant operating setup. Some of these ideas are big ones and some are little. Many a little one has turned big when it has been put into operation.

You might suggest a plant cleanup to include elimination of certain of the old equipment wrecks that are responsible for unreasonable production costs. You might add your suggestion for realignment of certain equipment to stop back tracking and get rid of several intermediate storage stops on the way to shipping. A few changes like those would give the sales department new prices to quote, prices that might give competition quite a jolt in your favor.

You could call attention to two or three items in the line of products that might do with some face lifting, or elimination to the benefit of the remaining items. You could name some modernizing materials and sales appealing treatment in the product designs.

You might even urge your advertising department to turn out a piece or two of unselfish helpful information, the same as you have received from other companies helping you make best use of things you have purchased from them. These actions might result in an increase in the number of prospects who want to do business with your company because they like you as well as the things you make.

Many companies have suggestions systems that would seem to cover this situation. They have brought in a great many useful suggestions and have rewarded both the company and the suggesters. The regular suggestion systems differ, however, from this particular "just suppose" in that they, in general, are not aimed at a specific purpose such as ideas to help selling in a period when selling is particularly critical.

Of course you may not have any ideas on this subject and might be at a loss if you were asked. And of course nearly every company employs individuals whose specific duty it is to think up improvements in both the products and the production processes. And of course the idea of asking you may not occur to the Big Boss. And of course you may not be interested in promotion resulting from suggestions you make in or out of your line of duty. But just suppose.

W. E. Irish.

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750 DIFFERENT CABINET COMBINATIONS

Available for Small Parts Storage, Handling or Display. A Type and Size for Every Need.

We can supply you the perfect cabinet for your particular requirements. 750 different combinations can be CUSTOM - BUILT at production line prices. Free catalog upon request.

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If you write maker identify as IEN - 1246

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loosens frozen parts

11,500 industrial users depend upon this amazing new chemical tool when some frozen parts tie up valuable machinery or threaten production. They say . . .

"Kroil will loosen almost anything from an embalmer's needle to a bulldozer."

"We have excellent results loosening stuck slides on musical instruments."

"On a 25-year-old Bessemer gas engine, two bolts twisted off before . . . after using Kroil, they all came out easily."

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You too can get these results. Try KROIL on money-back basis. Gallon, $3.85; with Kroiler squirt gun, $4.95, f. o. b. factory.

Ask for GENIUS AT WORK—a free publication full of ideas for maintenance men.

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MAGNI-FOCUSER

Has fine ground lenses of optical glass. Neutralizes eye strain from close work. Binocular design gives third dimensional vision. Allows freedom of both hands. Wear over glasses. Plastic frame with adjustable headband.

SIZES: 20" focal lgth. 1½ power—14" focal lgth., 1¾ power, 10" focal lgth., 2½ power; 8" focal lgth., 2¾ power . . . . . price each ONLY 10.50

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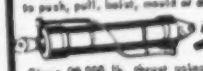

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Gives 20,000 lb. thrust using 1500 PSI line pressure as obtained from our hydraulic pumps. Will produce up to 40,000 lb. thrust with 3000 PSI. Can also be used on a low pressure air system. Has 4" bore; 18" stroke; 30½" long. Ideal for shop. USED 29.95

Part No. 79 NEW 43.95

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HYDRAULIC HAND PUMP

Operating pressure 1500 PSI. Cap., 1.5 cu. in per complete cycle . . . 12.75

NEW 10 TON HYDRAULIC PRESS

SIZE: 68" high 27" wide 29" base

Use this Press in the Shop or take it with you on the job. Frame is 4" welded channel iron. Has 48" stroke, 2¾" diam. ram. Valve operates piston in both directions. Adjustable platform. Positive power Hand Pump with handle. 2000 PSI pressure gauge. 129.00

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Pay by M.O. or check. P.O.'s accepted from D&B firms. To deposit with C.O.D.'s Prices FOB Los Angeles.

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If you write maker identify as IEN-1249

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(Export sales, Scheel International, Inc., Chicago)

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Exclusive patented blade holder adjustable to varying thicknesses of carton covers.

THE ONLY CARTON OPENER THAT GIVES YOU ALL THESE ADVANTAGES:

Penetrates exactly under the outer cover thickness • Protects contents of carton • Cuts clearly to permit re-use • Prevents accidents • Saves time • Eliminates fatigue. *Already accepted by leading industries.*

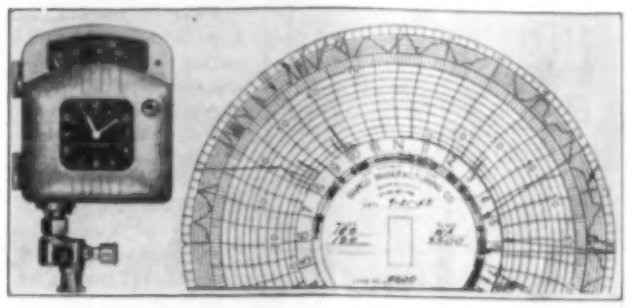
Retail Price $1.75

FLASH BOX OPENER CO., Inc.
52 W. Houston St. • New York 12, N. Y.

If you write maker identify as IEN-1251

RECORDING . . Motion actuated unit traces equipment activity on a chart

Source: BARCO MFG. CO.
500 Hough St., Dept. IEN, Barrington, Ill.



Bulletin, "Switch Engine Recorder"

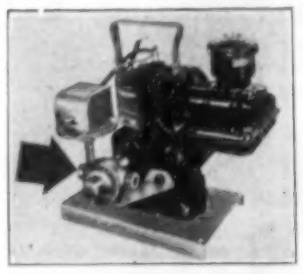
New design of the company's Tachograph, primarily intended to make a daily record of switching locomotive performance, provides a record of miles traveled during each 10 min. of the day, speed in miles per hour and intervals during which the locomotive is standing, idling, moving slowly or operating at full speed. These data are traced by stylii on a chart in the instrument housing after the chart has been placed inside the door and the door closed and locked. The chart is driven by a spring wound clock. Closing and opening the door cuts notches in the outer rim of the chart to show start and stop of the record.

The face of the instrument reads total miles traveled, speed at any instant, and the time of day. Improvements include a restyled reinforced case, a rectangular center opening in the chart to place it in correct position on the rotating hub of the clock, "true arc" speed recording stylus for accurate speed readings, relocation of the total mileage counter at the top of the housing and pre-lubricated sealed bearings on the instrument shafts. There is also an improved drive unit, to mount on a wheel axle journal box cover, in addition to the regular friction drive unit that applies on a wheel rim.

If you write maker identify as IEN-1252

PUMP . . Rotary design unit, mounted on a 1 hp. gasoline engine

Source: HYPRO ENGINEERING INC.
404 N. Washington, Dept. IEN, Minneapolis 1, Minn.



Model G3800 VS

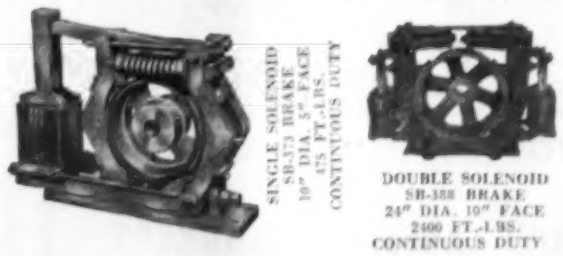
Sump draining and liquid transfer are primary points of application for this new combination of the company's rotary flexible rubber finger impeller pump, previously described IEN-7437-53, and a Model 5S Briggs and Stratton air cooled gasoline engine. The hollow shaft of the pump assembles on the engine crankshaft.

Pump capacity is 8 gpm. on open discharge. Pressure is to 30 pounds. Suction lift, unprimed, is to 10 ft. and, when primed, is to 22 feet. Outside threaded ports take hose couplings. The weight of the pump and engine with the fuel tank and base plate is 35 pounds. A vacuum switch stops operation if the pump runs dry. The switch will shut down a sump pumping job without requiring operator attention.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN-1253

TROMBETTA SOLENOID CORP.
331 N. MILWAUKEE ST. • MILWAUKEE 2, WIS.



SB-300 LINE OF BRAKES

Sizes 2½" dia. x 1½" face to 72" dia. x 14" face, continuous rating range from 3 ft.-lbs. to 24,000 ft.-lbs.

8 SPECIAL FEATURES

(1) Operated by long stroke, high power large capacity solenoids. (2) Only 50% of solenoid stroke is used to release the brake. The extra 50% is reserve to take care of lining wear. (3) They can be used for stopping as well as for holding loaded motors. (4) In double solenoid type, one solenoid operates the brake and the other is a spare assuring uninterrupted operation. (5) They are available for all voltages and frequencies alternating current. (6) Also for all voltages direct current series or shunt connections. (7) In shunt operation no series resistances, no discharging resistances are necessary. (8) They are available with oil immersed and explosion proof solenoids.

NINE LINES OF SOLENOIDS, RECIPROMOTORS AND SEMOTORS

See McGraw Hill's Prefiled Electrical Catalogs. Write for Additional Information.

If you write maker identify as IEN-1254

FIT THE HEAT TO YOUR WORK

Chromalox Electric Tubular Heaters are available in straight lengths or they may be curved and formed to fit your exact specifications. They provide accurately controlled, economical and dependable convection, conduction or radiant heat. Use them for dies, molds, platens; as immersion heaters in liquids, soft metal and molten salts; or in ovens, air ducts and other air heating applications. Consult Chromalox now for all your production heating needs.

For Full Details
Write for Catalog 50. It lists Chromalox Tubular Heater sizes, types and ratings, sheath materials, fittings and special shapes.

Industrial Div., EDWIN L. WIEGAND CO. 7505 Thomas Blvd., Pittsburgh 8, Pa.
See our Radiant Heaters Advertisement, Page 11
CHROMALOX
ELECTRIC HEAT FOR MODERN INDUSTRY

If you write maker identify as IEN-1255

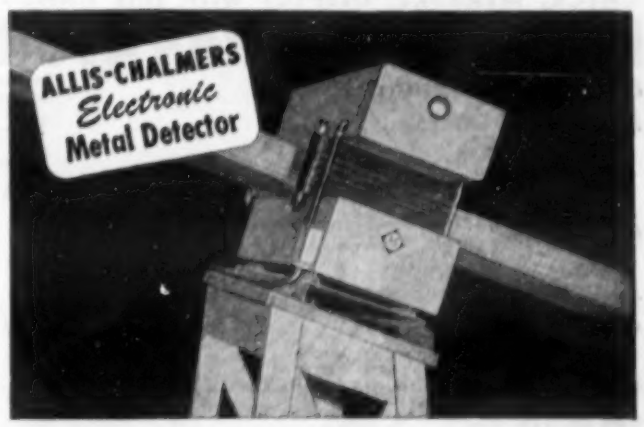
MODEL SF-100-AE
EMBOSSING FIXTURE

This Fixture code marks all sizes of can lids up to one gallon, with one or more lines of lettering—with easily-changed type. A plastic matrix serves as the female die, which can be reused and does not have to be changed as characters are changed. Investigate today!

Write for Complete Data!

Mecco SAFETY MARKING TOOLS **M.E.CUNNINGHAM CO.**
1039 CHATEAU STREET, PITTSBURGH 33, PA.

If you write maker identify as IEN-1256



ARE YOU SURE IT'S PURE?

CAN YOU BE SURE no metal particles are getting into your packaged food? Magnets can't stop lead or brass or aluminum. The answer is, you *can't* be sure—without an Electronic Metal Detector. There's no other practical way!

Best of all, Allis-Chalmers Electronic Metal Detectors fit production set-ups. For example, conveyor belts from packaging machines can carry packages through the aperture of the detector at 15 to 600 fpm. Unit compares in upkeep and operating cost with a household radio. Latest design minimizes maintenance.

Call your nearby Allis-Chalmers Office for complete information, or write Allis-Chalmers, Milwaukee 1, Wisconsin.

A-3711

ALLIS-CHALMERS A-C

If you write maker identify as IEN - 1257

Easy to install standard O. A. widths — 18", 22", 30". Length as required. Top quality 3-ply 28 oz. duck with thick traction rubber top. Reversible direction of travel. 3-phase gearhead motor.

ASK OUR ENGINEERS FOR SPECIFIC SUGGESTIONS

METZGAR CONVEYOR CO.

417 Douglas N. W.

MFRS. OF WHEEL & ROLLER GRAVITY & LIVE ROLLER CONVEYORS • POWER BELT CONVEYORS • SWITCHES • ACCESSORIES & REEL DOLLIES

GRAND RAPIDS 4, MICH.

If you write maker identify as IEN - 1258

....AMERICAN MONORAIL CRANES

for smooth operation at low maintenance cost use...

Three-ton hoist hook service extends from craneway to craneway by finger-tip controlled passage of carrier across crossover with cranes interlocked at each end.

To handle variable loads over maximum areas, Mono-Rail Cranes offer smooth travel, easy movement, interlocking service between and beyond craneways, low initial cost and most important low maintenance cost. American MonoRail engineers are experienced in all phases of "up and over" handling. They are available for free consultation at your convenience.

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THE AMERICAN MONORAIL COMPANY

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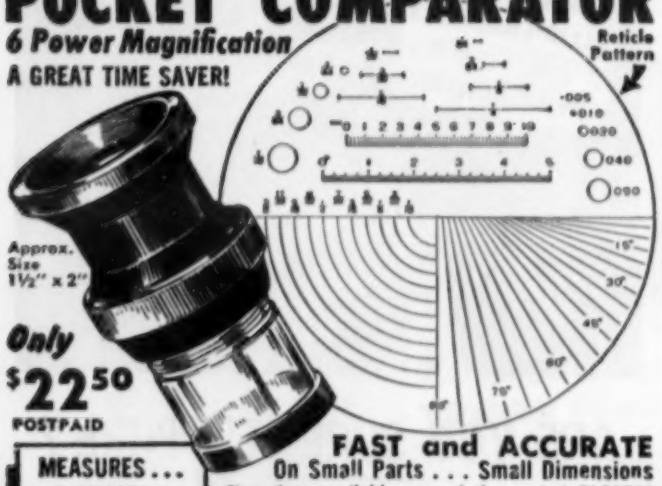
CHECK, MEASURE, INSPECT with this HANDY

POCKET COMPARATOR

6 Power Magnification

A GREAT TIME SAVER!



***Only* $22.50 POSTPAID**

MEASURES...
- ANGLES
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- CIRCLES
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in both decimal inches and millimeters

FAST and ACCURATE
On Small Parts . . . Small Dimensions

First time available at such low price! EDSCORP POCKET COMPARATOR. Fine, imported measuring magnifier — for fast, accurate inspection of intricate parts without expensive equipment. Used to check layouts, machining on tools, dies, gauges — to check threads, chamfers, small holes. In optical work for checking flaws. Instrument comes in protective leather case. We guarantee complete satisfaction or your money back.
Order Stock No. 30,061-AS . . . $22.50 postpaid. Send check or M.O. or order on open account.

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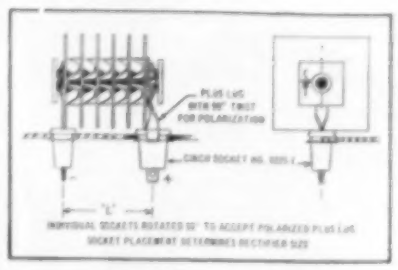
If you haven't seen our big, FREE Catalog, you don't know what you're missing. Fantastic variety — never before have so many lenses, prisms, optical instruments, and components been offered from one source. Positively the greatest assembly of bargains in all America. Imported! Domestic! Telescopes! Microscopes! Hand Spectroscopes, Prisms, Lenses, Reticles, Mirrors and dozens of other hard-to-get optical items. Write for FREE CATALOG "AS".

EDMUND SCIENTIFIC CORP., Barrington, N. J.

If you write maker identify as IEN - 1260

RECTIFYING . . Selenium assembly, plug-in design helps field replacement

Source: SARKES TARZIAN INC.
415 N. College Ave., Dept. IEN, Bloomington, Ind.



Electronic component

Plug-in lugs have been added for application in Cinch sockets for application of the company's standard Centre-Kooled selenium rectifiers. The lug arrangement is subject to specification to assist in field replacement of the rectifier. The Cinch socket position determines rectifier size so an incorrect one cannot be inserted. The plus lug is twisted through 90 deg. for polarization.

The rectifier line ranges from 1-in. square plates, rated 75 ma. dc., to 2½-in. plates rated 750 ma. Input is 130 to 200 volts rms. for standard assemblies.

If you write maker identify as IEN - 1261

VISE . . General purpose design rotates on base, opens to 5 inches

Source: COLUMBIAN VISE & MFG. CO.
9017 Bessemer Ave., Dept. IEN, Cleveland 4, Ohio

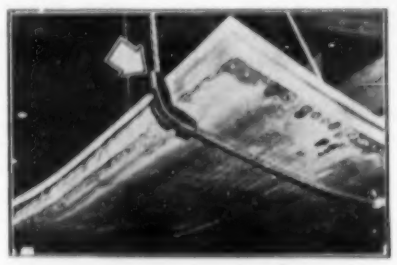
Screw operated

Gyro-Vise No. 72½ is a new vise for use on a bench or at a machine in upright position or on its side. It rotates through a complete circle on its base. It mounts jaws measuring 2½ in. in width by 4¼ in. in depth. Overall height is 10½ inches. Weight is 16 pounds. The unit is suited to hold either metal or non-metallic work for hand or machine operations.

If you write maker identify as IEN - 1262

HANDLING . . Wire rope saddle protects rope and corners of a load

Source: NEWMAN MFG. & SALES CO.
Box 5939, Dept. IEN, Kansas City 11, Mo.

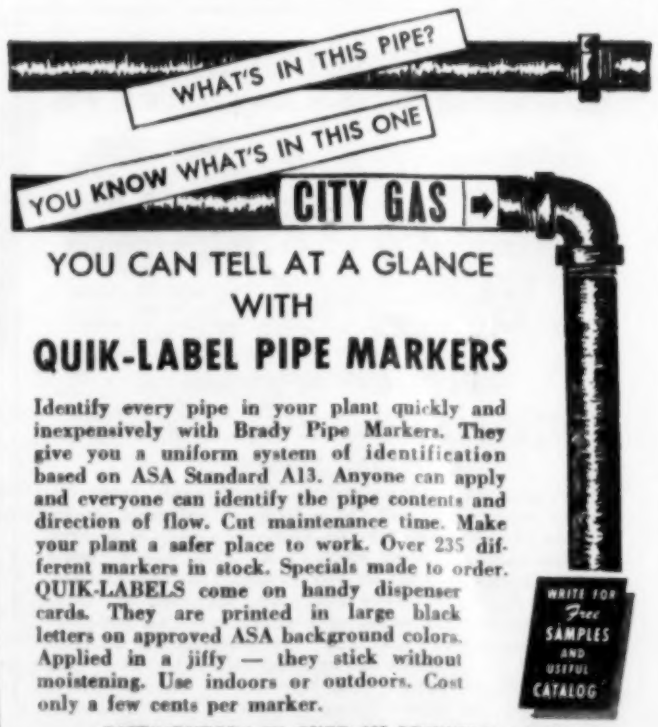


Fits snug on rope

Cast bronze is employed in this new protective rope saddle. It slips into place on a wire rope to cradle the corner of a load and to provide a curved surface for the rope. Two types, with 90 and 135-deg. rope angle, are available in three rope sizes from ½ to 1⅛ inches. Weight is 2 to 6½ pounds. List price is $11.50 to $39.75 per pair.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 1263



YOU CAN TELL AT A GLANCE WITH

QUIK-LABEL PIPE MARKERS

Identify every pipe in your plant quickly and inexpensively with Brady Pipe Markers. They give you a uniform system of identification based on ASA Standard A13. Anyone can apply and everyone can identify the pipe contents and direction of flow. Cut maintenance time. Make your plant a safer place to work. Over 235 different markers in stock. Specials made to order. QUIK-LABELS come on handy dispenser cards. They are printed in large black letters on approved ASA background colors. Applied in a jiffy — they stick without moistening. Use indoors or outdoors. Cost only a few cents per marker.

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DISTRIBUTORS IN OVER 125 PRINCIPAL CITIES

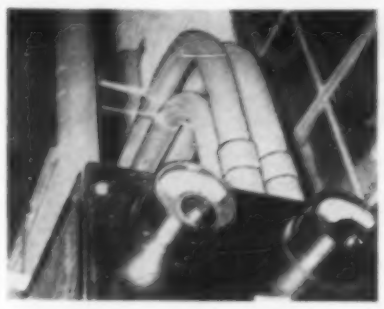
WIRE MARKERS · PIPE MARKERS · SAFETY SIGNS · PRINTED ROLL TAPE · MARKS & STENCILS

MANUFACTURERS OF SELF-STICKING PRODUCTS

W.H. BRADY COMPANY

734 W. GLENDALE AVE. • MILWAUKEE 12, WIS.

If you write maker identify as IEN - 1264

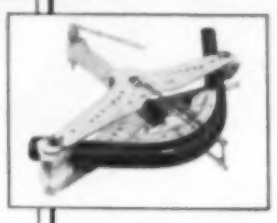


• 20 hours in time
• $64 in materials

SAVED ON ONE JOB WITH A TAL PORTABLE BENDER

by the Johnson Electric Co. Chicago

By making 12 90° bends in 3" conduit with a TAL ONE-SHOT BENDER instead of using elbows and couplings, time was cut from 59 to 39 hours . . . $134 was saved on labor and material on installation of a 250 hp, 220 volt, 3-phase air compressor in the shop of the Diamond T Motor Car Co., Chicago. This was possible only because a TAL ONE-SHOT completes bends in one setting—no shifting of pipe is necessary!



COMPLETE LINE OF BENDERS

- For pipe up to 8"
- For copper and thinwall tubing.
- 6-Way Hickeys — do what others can't do.

TAL BENDER, INC.

DEPT. 2 • MILWAUKEE 2, WISCONSIN

If you write maker identify as IEN - 1265

SAVE TIME AND MONEY with this

OXWELD Trade-Mark **MACHINE CARRIAGE**

Here is a new lightweight machine carriage—the OXWELD CM-45—that will mechanize literally dozens of oxy-acetylene jobs in large or small metalworking shops, and do them better than the most skilled hands.

You save money when you let the CM-45 do your cutting, beveling, flame-treating, or special welding jobs. Its efficient operation saves oxygen and acetylene as well as time, and rejects are reduced to a minimum.

For further information, call your nearest LINDE representative today. Ask for a free copy of Form 7839. No obligation.

LINDE AIR PRODUCTS COMPANY
A Division of Union Carbide and Carbon Corporation
30 E. 42nd St., New York 17, N.Y. Offices in Other Principal Cities
In Canada: Dominion Oxygen Company, Limited, Toronto

"Oxweld" is a trade-mark of Union Carbide and Carbon Corporation.

If you write maker identify as IEN - 1266

PROTECTS YOUR RAILROAD SIDING OR TRUCK LOADING DOCK

Men and merchandise remain dry . . . damage is prevented.

A simple, inexpensive way to make your loading dock useful the year around. Mamaux Dry Dock Cover folds flat when not in use. Made of heavy flame and water-resistant canvas, sturdy frames and hardware. Cover roof slopes for rain run-off; canopy extends inside car or truck—keeps walkway dry.

Three scissors arms on each side offer rigid support. No bottom bar to impede truck tailgate.

Write or phone for full details
Each cover is custom made to fit your loading dock

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If you write maker identify as IEN-1267

CHAMPION E-X-P-A-N-D-I-N-G MANDRELS

give speed to every set-up

The flexible sleeve, mounted on tapered arbor, expands automatically to fit the hole. Inserted by hand — no arbor press needed. Always an exact, positive, concentric fit. Locked by a single mallet blow. Unlocked the same way. CHAMPION Expanding Mandrels are used in machine shops around the world. Save time, cut production costs, whether the job calls for machining one piece or a thousand.

Precision Model has expansion range of .010". Available in regular sizes to fit holes from ½" to 3" diam. Holds work to tolerances of .0002" run-out. Guaranteed for precision grinding, turning and milling operations.

Standard Model maintains close tolerances, handles material of any length bore, hard or soft metals — from thin tubes and bushings to heavy castings and forgings. A set of fourteen will fit every hole from ½" to 9½" diam.

CHAMPION *Expanding Mandrels can be made in special shapes and sizes to fit any specifications. Quotations on request. Write for descriptive folder today.*

WESTERN TOOL & MFG. CO., INC.
Dept. 22 Springfield, Ohio

If you write maker identify as IEN-1268

Announcing...

a New addition to our popular line of **SELECTIVE FEEDING DEVICES**

NOW! A FEEDING UNIT FOR ALMOST ANY SPECIFIC APPLICATION!

Also **EXTENDED ENGINEERING SERVICE—** ENABLING US TO DO THE COMPLETE TOOLING FOR YOUR INDIVIDUAL FEEDING OPERATIONS

New!

DPS BOWL-FEEDER

A proved method based on the VIBRATORY PRINCIPLE. Provides fully automatic, oriented, single line feeding to Grinding, Packaging, Inspecting and many other automatic machines and operations. Will scientifically feed light, fragile parts that normally could not withstand tumbling.

DPS BARREL-FEEDER

For years our popular unit, successfully used in thousands of plants to help speed production and reduce costs. They were designed with the idea of simplicity in operation and maximum feeding, handling a wide variety of parts. Designed for constant operation.

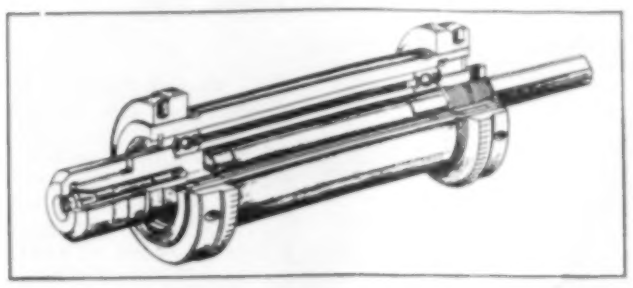
Write Us—GIVE DETAILS AND LEARN HOW OUR TRAINED ENGINEERS CAN SUPPLY THE ANSWER TO YOUR FEEDING REQUIREMENTS

DETROIT POWER SCREWDRIVER CO.
2815 W. FORT ST. DETROIT 16, MICHIGAN

If you write maker identify as IEN-1270

SPINDLE . . Ball bearing design, precision standardized construction

Source: RUSSELL T. GILMAN INC.
2410 N. Farwell Ave., Dept. IEN, Milwaukee 1, Wis.



Certain types carried in stock

Illustrated is a section through the collet chuck design of the company's new line of standardized precision spindles. The line includes units with No. 0 and No. 1 Morse tapers and collet assemblies for ⅛, 3/16 and ¼-in. collet chucks. Overall dimensions of the spindle assembly are from 4⅝ in. in length and from 1⅝ to 2½ in. in diameter.

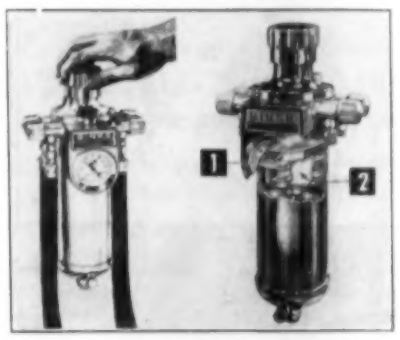
The quill body is fitted with a keyway to secure the unit in place in a machine. The spindle is adjustable longitudinally, with relation to the quill, by turning nuts at either end. These nuts are graduated in increments of 0.0005 in. except on the ⅛-in. collet type. It is graduated to 0.001 inch.

Spindles are machined from tool steel and then are hardened and ground. They are mounted in single-row ball bearings preloaded by applying selected inner and outer bearing spacers, factory lubricated and double sealed. Ground threads are provided to lock the bearings in position. Collet spindles also have ground threads to mount the chuck. The Morse taper spindles are tubular with a through hole to take a draw bar or knockout pin.

If you write maker identify as IEN-1271

SEPARATING . . Compressed air unit with regulator to supply paint guns

Source: BINKS MFG. CO.
3122 Carroll Ave., Dept. IEN, Chicago 12, Ill.



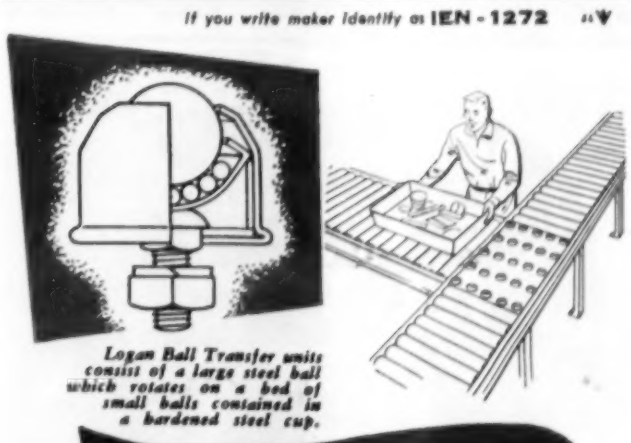
Automatic drain

Compressed air enters this new Type AO-120 Extractor separator to move down a spiral path 1 inside the cylindrical housing. Centrifugal force throws heavy particles of moisture, oil, corrosion, dirt, to the outside of the air stream where they drop to the bottom for drainage. The air passes inward through a new type of reusable filter 2. It screens out remaining foreign matter and also absorbs moisture and fluids.

Pressure is set at a regulating knob on top of the housing. A dial shows the outlet pressure. The assembly has four outlets, two for regulated air and two connecting directly to the air line supply for blow guns or other air operated equipment. Each is controlled by a knob operated valve on the housing side.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN-1272



Logan Ball Transfer units consist of a large steel ball which rotates on a bed of small balls contained in a hardened steel cup.

BALL TRANSFERS

Logan Ball Transfers are handling equipment, designed primarily for use in transferring at right angles or where it is desired to rotate packages without lifting. Can be adapted to other applications. You can buy separate ball assemblies from stock or complete tables made-to-order.

Logan offers Ball Transfer units in several different sizes.

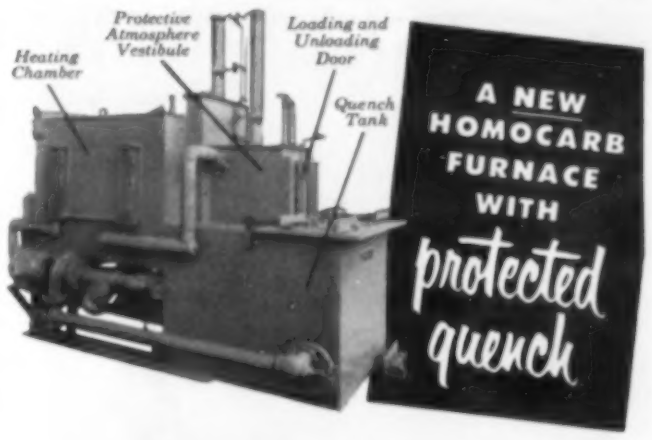
Further information on request.

Ball Pedestal units also available for handling sheets and plates.

Logan Conveyors

LOGAN CO., 276 CABEL ST., LOUISVILLE, KY.

If you write maker identify as IEN-1273



Now, for the first time work can be direct-quenched from a Homocarb furnace under a protective atmosphere. All the well known benefits of the Homocarb method are provided. In addition, work moves directly from furnace to quench without exposure to air.

The complete equipment consists of:

- The new horizontal Homocarb furnace with protected quench
- Microcarb atmosphere control
- D.A.T. three-function temperature control

For complete information just write us at 4905 Stenton Avenue, Phila. 44, Penna.

Jrl. Ad T-620(43b)

LEEDS & NORTHRUP instruments · automatic controls · furnaces

If you write maker identify as IEN-1274

Looking for a Better Conveyor? Then You Want This Book

If your conveying problem involves cans, bottles, jars, packages, small parts or almost any other small unit, you'll want this new book on Rex TableTop® Chain. The book explains all the advantages of TableTop's simplicity...how it reduces maintenance...speeds production ...helps cut conveying costs.

There are also sections on two other great conveying chains—Rex FlexTop® and Baldwin Rex PlateTop®. Just use the coupon to send for your free copy today.

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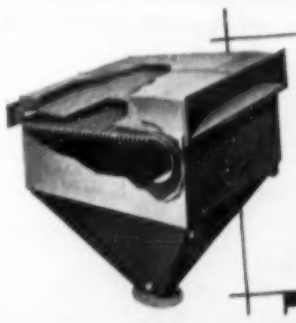
Milwaukee 1, Wisconsin
Please send me TableTop Chain Bulletin 53-60.
Name.....
Company.....*Dept*.....
Address.....
City.....*State*.....

If you write maker identify as IEN-1275



Solves Big Problem for Small Boiler Operators!

Buell 'LR' Collector gets 99% of all 100-mesh and larger cinder discharge. Top efficiency for boilers from 100 to 2000 BHP.

Draft loss so low you can use 'LR' on the smallest natural draft boilers.

Get all the facts—write for 'LR' Bulletin. Buell Engineering Company, Dept. 22-B, 70 Pine Street, New York 5, New York.

buell

Engineered Efficiency in **DUST COLLECTION**

If you write maker identify as IEN - 1276

ONE MAN CAN SAFELY, EASILY HANDLE 1000 LB. DRUMS

This Thomas No. 90 Safety Drum Truck makes handling of drums and barrels a cinch for one man. Trucker never touches barrel—loading and unloading is automatic. Sliding 2-in-1 hook fits all wooden and metal barrels, cradles drum securely so it can't roll off. Order one on a "return if not pleased" basis.

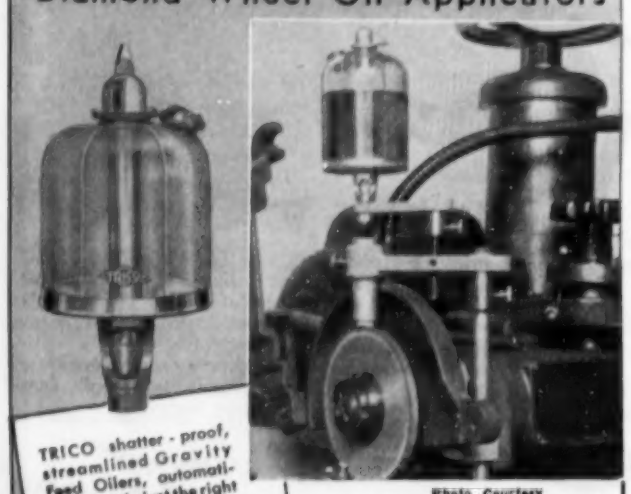
Send for Free Catalog

THOMAS TRUCK & CASTER CO.
443 Mississippi River, Keokuk, Iowa

If you write maker identify as IEN - 1277

TRICO CASE HISTORY

GRAVITY FEED OILERS Supply Lubricant to Precision Diamond Wheel Oil Applicators



TRICO shatter-proof, streamlined Gravity Feed Oilers, automatically supply just the right amount of oil for lubrication of Diamond Wheel on Surface, Cylinder and Tool Grinders. Oil supply is always visible and reservoir requires only occasional refilling.

Photo Courtesy CARBIDE FINISHING CO. Milford, Conn.

There's A TRICO OILER For Most Every Application.

Constant Level, Gravity Feed, Wick Feed, Multiple Feed (Solenoid and Manual control), Oil Cup & Gauge, Thermal & Bottle, Large Capacity Gravity Feed.

WRITE FOR FREE DESCRIPTIVE CATALOG

TRICO FUSE MFG. CO. MILWAUKEE, WIS.

If you write maker identify as IEN - 1278

NEW MHS

Spur Curve

with SmoothSwitch mechanism

Here's one you'll want to know all about, because it will end the jam-ups on your roller, wheel, and belt conveyor lines! Linkage system, actuated by solenoid, air or hydraulic ram, or by hand, moves rollers into positive position for smooth operation in either direction. Available in various widths, in regular or heavy duty rollers. 45 and 90° spur curves; 45 and 90° Y switches.

Write today for full information on the new MHS Spur Curve with SmoothSwitch mechanism!

MECHANICAL HANDLING SYSTEMS INC.
4605 Nancy Ave., Detroit 12, Michigan
Offices in Principal Cities
In Canada: Canadian Mechanical Handling Systems Ltd. Windsor and Toronto

If you write maker identify as IEN - 1279

GAGE . . Dial comparator unit checks inside diameters to master

Source: MUTUAL ENGINEERING SERVICE
402 Court St., Dept. IEN, Saginaw, Mich.

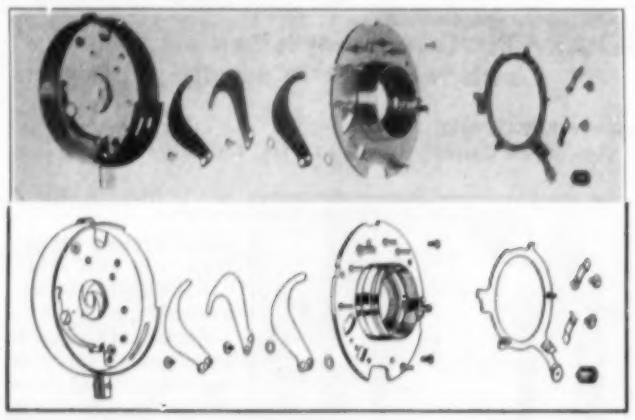
Finger tilts to enter

Diametrick Model A is a new dial indicator comparator gage that is set to a master, to gage blocks, to micrometers, or a snap gage, and then is employed to read plus or minus deviation on inside diameters and in O-ring and snap-ring grooves, recesses, reliefs. The gage will also check out of roundness and taper. The Federal indicator reads in 0.00025 in. divisions to 10 on both sides of zero at the top of the dial.

Diameter range, to which the gage can be set, is from 1.375 to 3.625 inches. The gaging fingers will reach into grooves to 0.2 in. in depth and to 2.25 in. from the front of the work. At minimum setting, the fingers will enter a 1.125-in. bore. The gage is applied with a lower arm resting on the work so the upper arm can be rocked in all directions. List is $295.

If you write maker identify as IEN - 1280

You start with a good photographic film negative of an object, or a number of objects. You wind up with a first class



line drawing when you employ the new Tone-Line process of photographic reproduction that has been developed by Eastman Kodak Co., 343 State St., Dept. IEN, Rochester 4, N. Y. The negative is combined with a positive so that the latter acts as a mask for the former.

The two are taped together in register and are placed in contact with a sheet of Kodalith film. The film is exposed by rapidly spinning the printing frame under a fixed light or by rotating a movable light above a stationary frame. Either method allows some light to work its way around the edges of the mask and negative and produce a line image of the film. Final retouching may or may not be required.

The company will send you a new booklet it has published on the subject under the title, "Line Effects from Photographs by the Kodak Tone-Line Process."

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 80

If you write maker identify as IEN - 1281

Need a building? Or a series of them? Quickly, and at low cost?

Truscon SPEED-ERECT Steel Buildings can be arranged to fit exactly your requirements of design and budget. Truscon Steel Buildings are available in a wide range of standard designs. They are used for all kinds of industrial and commercial buildings because they offer fire protection, permanence, ease and speed of erection, low upkeep, low cost, high investment value. Truscon Steel Buildings have a high salvage value which permits them to be dismantled and re-erected in an entirely new location at modest expense.

Write and tell us your building requirements.

FREE BOOK—Plan your building needs with the aid of the fully illustrated, 24 page catalog giving full details on these Truscon Ready-Made Steel Buildings. Write for your free copy today.

TRUSCON STEEL COMPANY 1094 Albert St. Youngstown 1, Ohio
Subsidiary of Republic Steel Corporation

If you write maker identify as IEN - 1282

THE FIRST NAME

WITH THE VERY BEST FACILITIES

DAYTON ROGERS *Manufacturing Company*

MINNEAPOLIS 7, MINN.

REPRESENTED NATIONALLY IN PRINCIPAL CITIES

If you write maker identify as IEN - 1283

STONEHOUSE SIGNS FOR ACCIDENT PREVENTION

TO KEEP PRODUCTION UP ...KEEP ACCIDENTS DOWN

Safeguard the worker against hazards and accidents—with the help of

STONEHOUSE SIGNS

Made in accordance with "American Standards Ass'n Specifications for Accident Prevention Signs"—the only authentic standards.

Write for complete Catalog No. 9, showing hundreds of different stock-worded Accident Prevention signs. It's free on request.

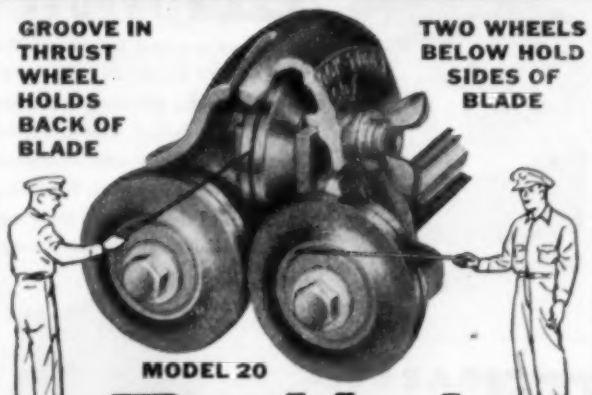
Stonehouse **SIGNS, inc.** MANUFACTURERS
Stonehouse Building · 842 Larimer · Denver 4 Colo.
"SIGNS SINCE 1863"

ACCIDENT PREVENTION SIGNS IN STANDARD COLORS AND DESIGNS

Sturdy, Strong, Band-Saw Guide

GROOVE IN THRUST WHEEL HOLDS BACK OF BLADE

TWO WHEELS BELOW HOLD SIDES OF BLADE



MODEL 20

Paddock BALL-BEARING **BAND SAW GUIDES**

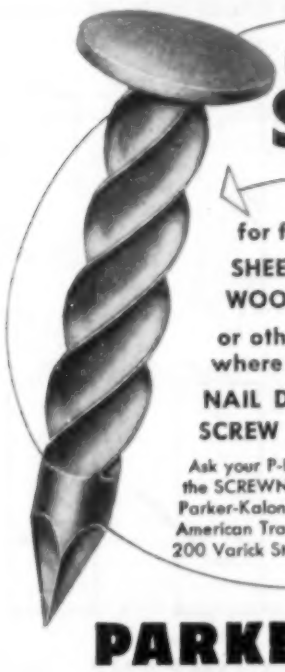
Do you want faster, smoother, safer Band-Saw operation? Install PADDOCK BALL-BEARING BAND-SAW GUIDES. Model 20 fits all machines having 2½" back of blade. Interchangeable ball-bearing wheels run with blade to give friction free blade support. Cut-away section in photo shows grooved wheel that supports back of blade. Two side wheels support sides of blade. Designed for ⅛" to 1¼" wide blades. Models for large or small machines. Write for details, give size, and make of machines.

SHIPPED ON APPROVAL WHERE VALUE IS QUESTIONED

PADDOCK TOOL COMPANY
Guide Makers Since 1920
1418 Walnut Street • Kansas City, Missouri

If you write maker identify as **IEN - 1285**

In to stay when you use **P-K**



Hardened Screwnails

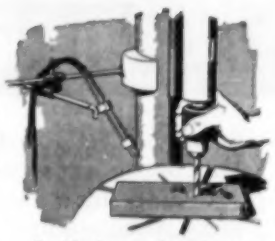
for fastening
SHEET METAL to WOOD
WOOD to WOOD
or other fastenings
where you need
NAIL DRIVING SPEED with
SCREW HOLDING POWER

Ask your P-K Distributor for samples and the SCREWNAIL folder, or write: Parker-Kalon Division, General American Transportation Corporation, 200 Varick St., New York 14.

PARKER-KALON®
FASTENERS

If you write maker identify as **IEN - 1286**

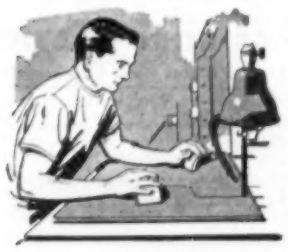
New ways to speed setups with CARBOLOY® ALNICO TYPE permanent magnets



Positioning coolant hose on drill press column.

You can eliminate many clamps, jigs, vises, fixtures and other costly units . . . speed setups and production . . . by using Carboloy Alnico permanent magnets.

Powerful, permanent energy makes these magnets ideal for innumerable holding, lifting and separating jobs. Unaffected by heat, moisture or vibration, the magnets cost nothing to operate . . . can save you time and money shopwide.



Holding steel plate during sawing operation.

Write today for your free Magnet Idea Literature Kit containing full details and diagrams of suggested shop uses for Carboloy permanent magnets. Write also for Carboloy "You-Try-It" Shop Packages. Perhaps they will spark you to greater savings in your plant. See coupon.

Get the "YOU-TRY-IT" Magnet Assortment

Shop Package No. 1

Shop Package No. 1 – Contains 48 Carboloy permanent magnets; 8 styles – 3 pairs each. Magnetic pull up to 2 lbs. per magnet. Price $10.00 (subject to applicable sales and use taxes). Order today.

Shop Package No. 2 – Contains 18 magnets: 4 styles – 2 pairs each; and 1 style–1 pair. Magnetic pull from 3 lbs. to 12 lbs. per magnet. Price $15.00 (subject to applicable sales and use taxes).

Shop Package No. 2

"Carboloy" is the trademark for the products of the Carboloy Department of General Electric Company

CARBOLOY
DEPARTMENT OF GENERAL ELECTRIC COMPANY
11177 E. 8 Mile Ave., Detroit 32, Michigan

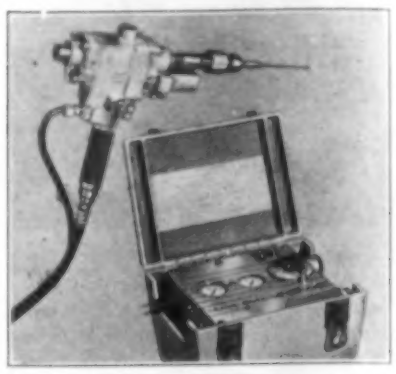
☐ Send me free Magnet Idea Literature Kit.
☐ Send me _____ Shop Package No. 1 at $10.00 each.
☐ Send me _____ Shop Package No. 2 at $15.00 each.
☐ Enclosed is check or money order for $_____. ☐ Send C.O.D.

Name _____ Title _____
Company _____
Address _____
City _____ Zone _____ State _____

If you write maker identify as **IEN - 1288**

EXPANDING . . Roll type tool for tubes, electronic drive control

Source: CRANE PACKING CO.
1800 Cuyler Ave., Dept. IEN, Chicago 13, Ill.



No need for skill

New design of the company's electronic control, previously described IEN-4256-49, is now available with a pneumatic motor to drive the expanding tool. The new equipment supplements the previously developed electric drive. Both designs limit the expanding action for assured tightness and holding strength of any tube.

Three sizes of the new John Crane electro pneumatic equipment, include No. 1 for non-ferrous tubes to 1¼ in. id., No. 2 for non-ferrous tubes to 1½ in. id. or ferrous to 1¼ in. id., No. 3 for ferrous tubes to 2¼ in. id.

If you write maker identify as **IEN - 1289**

CLEANING . . Seven emulsions designed to spray clean metal surfaces

Source: TURCO PRODUCTS INC.
6135 S. Central Ave., Dept. IEN, Los Angeles 1, Calif.

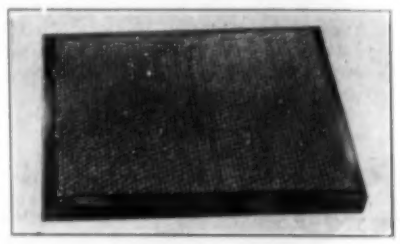
Bulletin A-106 upon request

The company announces availability of a new line of cleaning emulsions for addition in small amounts to petroleum solvents. The emulsions improve the penetrating power of the solvents and spread the cleaning action. The line includes light duty materials to a heavy duty emulsion cleaner to remove grease, bituminous materials, paraffin waxes, gilsonite coatings. The company has prepared instructions to assist in selection and application of each of the seven materials.

If you write maker identify as **IEN - 1290**

DUST COLLECTING . . Filter panel employs a gabled crimp screen design

Source: FARR COMPANY
P. O. Box 10187, Dept. IEN, Los Angeles 45, Calif.



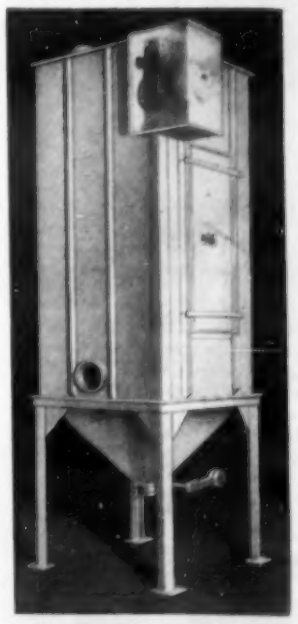
Far-Air High-Low

Ability to load progressively without critical pressure loss, design that permits cleaning without difficulty, and long service life characterize the construction of this new high-low velocity filter panel. It is standard at 20 by 20 by 1 in. in overall dimensions. It operates efficiently between 800 and 1,200 cfm. A single unit will hold 800 gm. of standardized fine air cleaner test dust between cleanings.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as **IEN - 1291**

RUEMELIN *Dust Control* EQUIPMENT



Vacuum Type Dust Filter with Electric Bag Shaker.

Ruemelin Dust Filters achieve a high rate of efficiency in the control of fine dusts. Our tubular bag design provides —

- Low resistance to air flow.
- Thorough shaking of bags while fan is shut down. Eliminates tautness.
- Maintenance, inspection and replacement of tubes made easy by our patented design.

Ruemelin Filters handle dusts created in metal working plants, foundries, cement mills and many similar industrial applications. Sizes from 250 to 30,000 cfm. Over 2000 collectors in service. Write for bulletin 24-D.

RUEMELIN MFG. CO.
3863 N. PALMER STREET MILWAUKEE 12, WIS., U. S. A.
MANUFACTURERS AND ENGINEERS — SAND BLAST AND DUST COLLECTING EQUIPMENT — WELDING FUME COLLECTORS

If you write maker identify as **IEN - 1292**

INVESTIGATE *Sta-Warm*

COMPOUND – RESIN – SOFT METAL

MELTING and DISPENSING EQUIPMENT

Outline your current compound melting problem to Sta-Warm today and ask for their engineering recommendations.
No obligation.

Sta-Warm ELECTRIC CO.
560 N. CHESTNUT ST., RAVENNA, OHIO

If you write maker identify as **IEN - 1293**

BE READY FOR *Every* CLEANING NEED

IDEAL BLO-R-VAC

Power-packed and with highest cleaning efficiency, IDEAL Blo-R-Vac speeds *all* your cleaning jobs! Low in first cost, it's actually *three rugged cleaners in one!* Vacuums lint, dirt, picks up water. Promotes scrap salvage — metal particles stay in big tank; lighter particles go into dust-tight bag. Power unit serves as a separate blower-sprayer or hand type cleaner. Full selection of attachments. 1⅓ or ⅔ H.P.

Triple Value!
A "Tank-Type" Cleaner
A "Hand-Type" Cleaner
A Blower-Sprayer

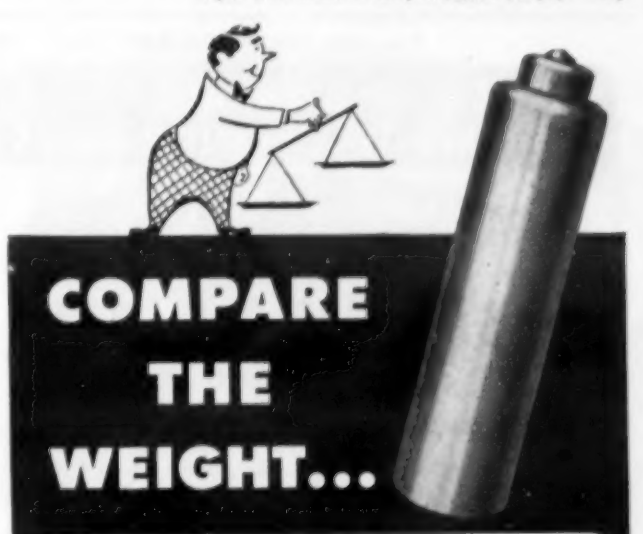
All in One!

CONVERTS IN A JIFFY! . . . from a "tank-type" cleaner to a "hand-type" cleaner or blower

Sold Through America's Leading Distributors
Canadian Distributor: Irving Smith, Ltd., Montreal

TRY IT FREE!
IDEAL INDUSTRIES, INC.
1108 Park Ave., Sycamore, Illinois
Arrange FREE DEMONSTRATION of your new BLO-R-VAC in our plant.
Name _____
Company _____
Address _____
City _____ Zone _____ State _____

If you write maker identify as **IEN - 1294**



COMPARE THE WEIGHT...

. . . of a Hackney Deep Drawn Part such as this with a cast, forged or welded pipe part. Here's a way to cut product weight—without impairing strength, durability or resistance to vibration.

It's a way successfully used—by dozens of other manufacturers—to cut weight, achieve closer tolerances, reduce production costs or improve product appearance. Write for details.

Hackney MILWAUKEE
Pressed Steel Tank Company
Manufacturer of Hackney Products
1449 S. 66th St., Milwaukee 14

CONTAINERS FOR GASES, LIQUIDS AND SOLIDS

If you write maker identify as IEN - 1295

BIG NEWS!

Both *Inch-Pound* and Foot-Pound Models of Amazing PROTO Torquer Now Available!

Tool users everywhere have acclaimed the amazing PROTO torque-*limiting* wrench as the sensation of the tool industry!
In addition to foot-pound models, you can now buy *inch-pound* styles and these handle thousands of jobs. Buy the model you prefer from your PROTO dealer today! Send 10¢ for 68-page catalog of entire line to
PLOMB TOOL COMPANY
2271Z Santa Fe Avenue, Los Angeles 54, Calif.

Fastest Torquer in the World!
- Automatic Torque-Limiting Release
- NO Dials, Scales or Pointers to Watch or Break
- Ratchet Head Models Save Time
- Accurate Micrometer-Type Adjustment
- Trouble-Free Construction

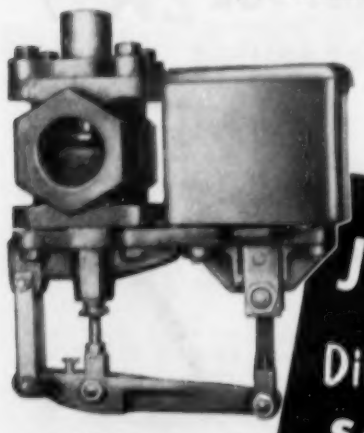
5383

PROTO TOOLS
PROTO Industry PROfessional TOols

Eastern Factory: Jamestown, N.Y.
Canadian Factory: London, Ont.

If you write maker identify as IEN - 1296

OUTSTANDING FOR STEAM SERVICE



JOHNSON Direct Operated SOLENOID VALVES

Stainless steel valve and seat. Sizes: ½" to 3". Write for facts.

Job after job, these Johnson Direct Acting Solenoid Valves are proving an ideal answer for service on steam lines. Their design removes the solenoid proper from the heat of the line, permits a leverage system with ample power to open against differential pressures up to 150 lbs. There are no pilot valves or auxiliary pistons, and construction is really heavy duty throughout. You will find their inherent simplicity and instant response will solve a lot of operating problems like no other valve can.

THE JOHNSON CORPORATION
846 Wood St., Three Rivers, Mich.

If you write maker identify as IEN - 1297

FAR LESS TIP BREAKAGE with "RING SEAT" CENTER DRILLS

USE "RING SEAT"

CENTER DRILLS

IF YOU GRIND BETWEEN CENTERS

The "R" type, curved contour Ring Seat center drills give you a stable, accurate, precision center, quickly restored after heat-treat.

Ring Seat center drills produce a protected center at no extra cost—and carry a built-in discount because they last longer.

Lapping After Heat Treat

is a simple quick operation since only about one-third the usual area needs clean-up. Lapping with a rotating felt wick removes heat scale and restores a perfect center — at the original place.

• A PREMIUM DRILL AT NO EXTRA COST •

LINK INDUSTRIES
13848 Elmira Detroit 27, Mich.

FREE CIRCULAR

If you write maker identify as IEN - 1298

HEATING . . Infra-red lamp in ratings to 6,000 watts from stock

Source: THERMEX COMPANY
533 Bergen St., Dept. IEN, Harrison, N. J.

About 5,000 service hours

Infralite trade names a new glass body infrared lamp in which the glass is immune to chemical corrosion and thermal shock. The lamp is suited for use in drying, heating, baking operations. It is available in the form shown with connection leads at the two ends or in complete assembly with a reflector measuring 6 in. in width.

Ten sizes, available from stock, rate 1,000 to 6,000 watts. Two, measuring 18 and 24 in. in overall length, are designed for operation on 115 volt input. The others operate on 220 volts, the largest measuring 42 in. in overall length and rating 6,000 watts. Larger units can be specified to a maximum of 10,000 watts. Maximum length is 72 inches.

If you write maker identify as IEN - 1299

CLEANING . . Abrasive blast machine is loaded and unloaded while operating

Source: CRO-PLATE COMPANY
747 Windsor St., Dept. IEN, Hartford 5, Conn.

The Roto-Matic

The operator places work pieces in suitable holding fixtures secured to the motor driven table of this new abrasive blast machine. The table carries the work through the blast chamber where fixed position guns perform the abrasive operation. Then it carries the work through a rinse chamber where slurry is removed, through a drying chamber where the work pieces are air dried and back for unloading and reloading.

The housing interior is divided into the three chambers. All are accessible through inspection doors. Variable speed is provided to regulate the table movement for given work. Construction is in stainless steel. The abrasive slurry is circulated by suction or by a pressure tank. No pump is required.

If you write maker identify as IEN - 1300

If you have done business with Javex, Dept. IEN, Redlands, Calif., manufacturers of television, radio and electronic devices, you are eligible to receive, without charge, a hand-made custom desk nameplate with an engraved Lucite plate on walnut. You will receive it by applying through the company's local manufacturer's representative or to the company direct. If you apply direct, please identify the purchases you have made and through whom you made them.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 1301

THE FASTEST, EASIEST WAY TO ADDRESS YOUR CONTAINERS

Pictured here is the WEBER DIRECT-TO-CONTAINER SYSTEM. The cartons have been pre-printed with a label frame. Consignee's address is printed inside the frames with a WEBER RJ-1 hand printer at the rate of 40 to 50 cartons per minute. Eliminates labels. Faster, neater than brush stenciling. The RJ-1 prints from stencil easily prepared on typewriter. Reservoir holds enough ink for 7,500 to 10,000 prints. Can be supplied with one or two counters for quantity check.
MODEL RJ-1 $14.50 WITH SUPPLIES.
SEND FOR FOLDER ON THE RJ-1 HAND PRINTER AND DIRECT-TO-CONTAINER SYSTEM
Weber Label and Marking Systems,
Div.—Weber Addressing Machine Co., Dept. IE-6, Mt. Prospect, Ill.

another **Weber** *system*

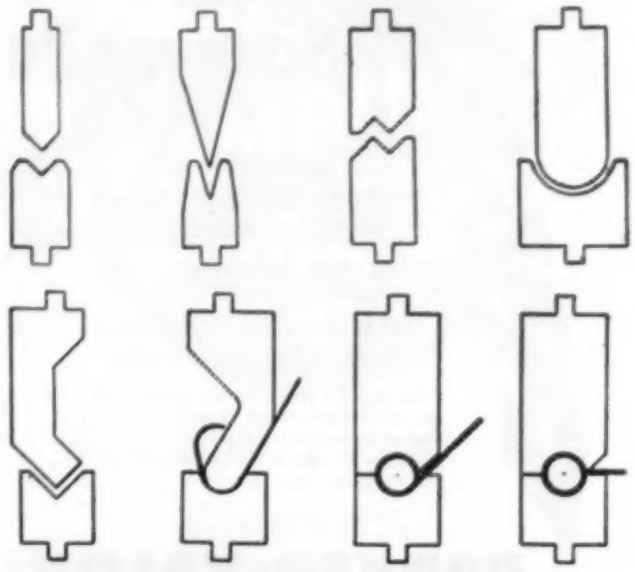
If you write maker identify as IEN - 1302

PRESS BRAKE FORMING DIES

PROMPT DELIVERY

Any Metal—any gage—to fit any make of machine

Here are a few examples:



RAFTER MACHINE COMPANY, INC.
SINCE 1917
249 Stephens Street Belleville 9, N. J.
COLD ROLL FORMING MACHINES AND GANG SLITTERS

If you write maker identify as IEN - 1303

REX-FLEX

HIGH PRESSURE
CORROSION RESISTANT
FLEXIBLE METAL HOSE

Stainless steel Rex-Flex is corrugated metal hose designed to convey a wide range of searching liquids or gases at high temperatures. Although light in weight, it is extremely durable and flexible and absorbs prolonged cycles of vibration, flexation and vari-plane motion. Rex-Flex is fabricated in both annular and helical convolutions in a wide range of sizes, complete with fittings.

FLEXONICS CORPORATION
Formerly Chicago Metal Hose Corporation
1333 S. Third Avenue, Maywood, Illinois
Manufacturers of flexible metal hose and conduit, expansion joints, metallic bellows and assemblies of these components.
In Canada: Flexonics Corporation of Canada, Ltd., Brampton, Ontario

If you write maker identify as IEN - 1304

. . . Protecting Your Product's Reputation!

Consumer goodwill determines the reputation of your product . . . and it often depends on the cord assembly you use! That's why a Riverside cord set is the best investment you can make. You save assembly time with easily installed pre-fabricated wiring. What's more, you avoid the upkeep of specialized production equipment. But most important . . . you install "Reputation Insurance" on every assembly! Take advantage of our specialized engineering experience and production facilities. Send us samples or prints for recommendations.

Riverside Manufacturing
AND ELECTRICAL SUPPLY COMPANY
10215 Michigan Avenue • Dearborn, Michigan • Phone Tiffany 6-6800
WIRING HARNESSES AND ASSEMBLIES • CORD SETS • HEATER AND EXTENSION CORDS • ELECTRICAL SWITCHES • RELAYS • MOLDED RUBBER PRODUCTS

If you write maker identify as **IEN - 1305**

TO ADD BEAUTY, COLOR AND SALES APPEAL
FOR CUSHIONING
FOR SILENCING

FOR A DURABLE PROTECTIVE COATING

INVESTIGATE *Cellusuede* FLOCK

THE PRODUCT FINISH *with* A THOUSAND USES

Every day product designers, industrial finish and material engineers are finding new, profitable uses for Cellusuede Flock—industry's most versatile product coating. With these cotton, rayon or hair fibers, you can add new beauty, color, and sales appeal to your product, provide a durable protective finish, silence noises, or dampen vibration. Best of all, the soft velvet-like Cellusuede finish is easy to apply to wood, metal, plastic, fabrics, leather, cardboard, or paper surfaces, either on a modified or production line basis. It's inexpensive, more durable than fabric, and readily available in a wide range of textures and beautiful colors. Investigate today the profit possibility of using Cellusuede for your product.

FREE BULLETIN — SAMPLES, TECHNICAL SERVICE

Write for 12-page bulletin illustrating profitable uses and applications. For help with a specific job, Cellusuede's technical service and unexcelled facilities are available for producing samples to meet your needs.

CELLUSUEDE PRODUCTS, INC.
Producers of Natural and Synthetic Flock
520 N. MADISON STREET • ROCKFORD, ILL.

If you write maker identify as **IEN - 1306**

YOU GET 10 BIG ADVANTAGES WITH CHROMALOX *Electric* RADIANT HEATERS

1. IT'S COLOR BLIND FAR INFRARED
2. UNIFORM HEAT—NO HOT SPOTS
3. BUILT TO TAKE A BEATING
4. HIGH INTENSITY RADIATION
5. QUICK WARM UP
6. UNIQUE 0-100% ADJUSTABLE HEAT OUTPUT
7. ADDED SAFETY WITH VOLATILES
8. FOCUSSED RADIATION
9. EASY OVEN BUILDING
10. SPACE SAVING

Want to know more about this
FLEXIBLE HEAT SOURCE?

Send for Bulletin CS-604. It shows you why and how Chromalox Radiant Heaters do a better job of baking, drying, curing, etc.

18-20

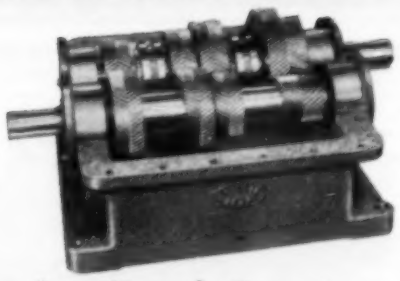
Industrial Radiant Heating Division
EDWIN L. WIEGAND CO., 7505 THOMAS BOULEVARD, PITTSBURGH 8, PA.

See our Tubular Heaters Advertisement, Page 5

CHROMALOX
ELECTRIC HEAT FOR MODERN INDUSTRY

If you write maker identify as **IEN - 1307**

Philadelphia
CHANGE-SPEED UNIT



Standardized Construction
—to give you Greatest Economy

Based on long experience in building Change-Speed Units to individual specifications, Philadelphia has developed a line of *standardized* units. This cuts the high cost and delayed deliveries of former methods.

Units are positive geared drives using herring-bone gears throughout. No belts to wear or slip. Ratios are definite for speed increasing or reduction or in combination. Wide range of horsepowers in 2, 3 and 4 speed units.

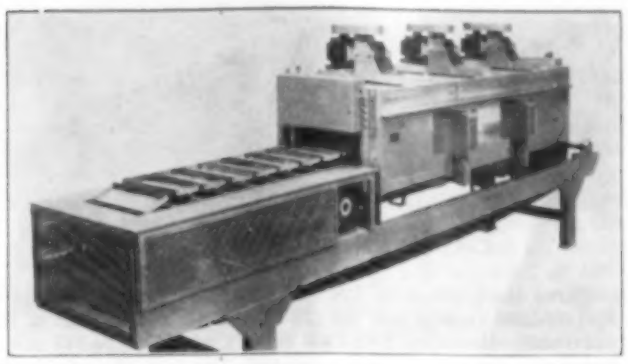
Write for catalog giving full details.

PHILADELPHIA GEAR WORKS, Inc.
ERIE AVENUE AND G STREET • PHILADELPHIA 34, PA.
NEW YORK • PITTSBURGH • CHICAGO • HOUSTON • LYNCHBURG, VA.

If you write maker identify as **IEN - 1308**

HEAT TREATING . . Electric furnace handles work on tray type conveyor

Source: HEVI DUTY ELECTRIC CO.
4212 W. Highland Blvd., Dept. IEN, Milwaukee 1, Wis.



Built to order

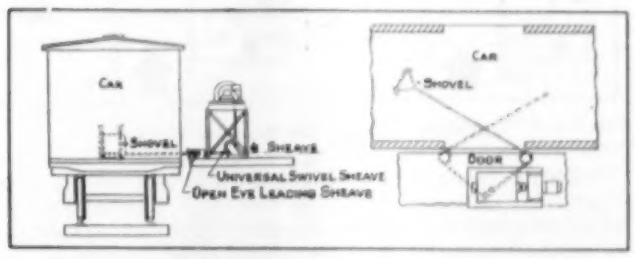
Small work pieces, in quantity, will pass through this new furnace without falling off the conveyor due to the tray design of the conveyor itself. A variable speed drive mechanism makes it possible to hold the work in the furnace chamber for 13 to 130 minutes. Three fans, located in the top of the housing, are individually motor driven to circulate the heated air from the nickel chromium wire wound ceramic elements.

The furnace is suited for tempering, annealing, stress relieving and heating with temperature maximum at 1,650 deg. F. Controls maintain the temperature at a desired point.

If you write maker identify as **IEN - 1309**

HANDLING . . Power scoop unloads bulk materials from box cars

Source: JEFFREY MFG. CO.
914 N. 4th St., Dept. IEN, Columbus 16, Ohio



Illustrated data in Bulletin 863

One operator controls the action of the motor driven winch, that pulls this new power scoop, by operating a switch on the scoop handle. The switch connects through an insulated conductor in the ½-in. flexible wire rope to the winch control. The switch operates a normally opened contact that releases a clutch so the scoop can be drawn back or stopped at any point. The cable unreels under control of a brake so there is no excess slack in the backward movement.

The winch drum holds about 45 ft. of ½-in. rope and exerts a pull on the scoop of about 1,500 pounds. The rope passes through an open eye sheave to a swivel sheave from where it leads upward to the drum. Overall dimensions of the winch assembly are about 6 by 2 feet. The scoop blade measures 30 by 20 inches. Operation is on 220/440-volt 3-phase 60-cycle ac. Rope speed is 180 feet per minute.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as **IEN - 1310**

CUT IDENTIFICATION COSTS

with BRADY Printed Self-sticking ROLL TAPES

SAVE OPERATORS TIME • ELIMINATE WASTE MOTIONS • GET QUICK, POSITIVE IDENTIFICATION

Label parts, pieces, assemblies, materials, etc., with Brady Printed Tape. Sticks to any clean, dry surface without moistening. Applied by hand or automatic dispenser.

Any wording, numbers, letters, trademarks or symbols printed to your order on cellophane, acetate fibre, paper or cloth tapes to fit your job requirements.

Choose from a variety of standard colors, roll lengths and widths.

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DISTRIBUTED IN 125 PRINCIPAL CITIES
MANUFACTURERS OF SELF-STICKING PRODUCTS

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W.H. BRADY COMPANY
EST. 1914
799 W. GLENDALE AVE. MILWAUKEE 12, WISCONSIN

If you write maker identify as **IEN - 1311**

Want PRECISION SHEARING at *HIGH SPEED?*

***Check These Features and You'll Want a* DI-ACRO* POWERSHEAR**

- PRECISION—strips less than .025" wide accurately sheared, parts exactly duplicated.
- CUTTING SPEED—ranges from 30 to 200 S.P.M. on Vari-O-Speed models—continuous and single stroke operations are possible.
- RATED CAPACITY—16 gauge sheet steel.
- EASY TO OPERATE—a woman can operate it.
- CHOICE OF MACHINE—four models are available.
- ENGINEERING SERVICE—always at your disposal.
- RUGGEDLY BUILT — backed by warranty.
- DELIVERY—immediate on most models.
- COST—that's good too.

*pronounced Die-ack-ro

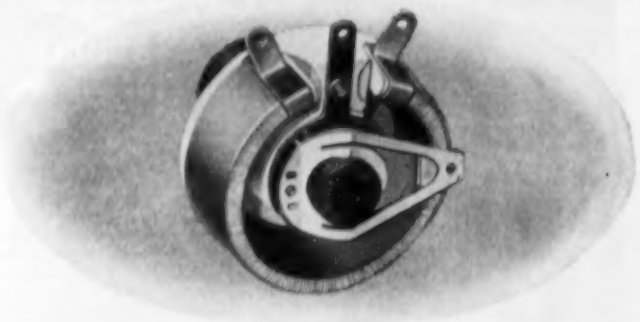
SEND FOR 32-PAGE CATALOG

di-acro PRECISION METALWORKING MACHINES

O'NEIL-IRWIN MFG. CO.
318 8th Ave. • Lake City, Minn.

If you write maker identify as **IEN - 1312**

TWO EXCLUSIVE FEATURES IN NEW VITROHM RING RHEOSTATS GIVE POSITIVE CURRENT CONTROL



MYCALEX insulating hub of Ward Leonard's new Ring Rheostats is *molded* to one end of the drive shaft to give more positive control and eliminate backlash.

Double ended, balanced spring steel contact arm, interlocked to the insulating hub, assures uniform contact pressure.

Stock types: 25R and 50R, 25 and 50 watts, 1 to 10,000 ohms.

Write Ward Leonard Electric Company, 33 South St., Mount Vernon, N.Y.

WARD LEONARD ELECTRIC CO.
Result-Engineered Controls Since 1892
RESISTORS • RELAYS • MOTOR CONTROLS • CHROMASTER

If you write maker identify as **IEN - 1313**

PLATECOIL
(REPLACE PIPE COILS)
cost less than fabricating pipe coils in your own plant

You can buy Platecoils for less money than it costs to fabricate pipe coils in your own plant. You also save critical steel because Platecoils require less than ½ the steel used in pipe coils of the same surface area. Installation takes far less time as Platecoils are mounted on simple hangers instead of the complicated racks needed for pipe coils. They take 50% less space.

Send for complete technical manual and descriptive Bulletin No. P56

PLATECOIL
Division
Tranter Mfg. Inc.
LANSING 4, MICHIGAN

If you write maker identify as IEN - 1314

A NEW STANLEY® BUILDERS SAW

Here's a new Stanley builders saw that **cuts 2 x 4's at 45°** and only weighs 12 lbs. Its 7" blade takes a deep 2⅜" bite at 90° and bevels at any angle up to 45°. Furnished with metal carrying case.

CHECK THESE OUTSTANDING STANLEY FEATURES:

1. Patented Stanley blade flanges that protect the motor from shock loads.
2. Cutaway window lets you see what you're cutting.
3. An automatic telescoping safety guard with convenient finger knob control.

The W70

OTHER STANLEY SAW ADVANTAGES

Housing—Fully polished die cast aluminum alloy
Gears—Alloy steel
Bearings—Full anti-friction
Switch—Double pole, momentary contact
Handle—Pebbled, non-slip surface, "multi-grip"
Speed—5200 r.p.m.
Service—Stanley Service Station near you

See This New Saw
Try the heft and cut of it. Your Stanley distributor has them now. For further information write Stanley Electric Tools, 414 Myrtle St., New Britain, Conn.

STANLEY ELECTRIC TOOLS

STANLEY — HARDWARE TOOLS STEEL STRAPPING STEEL

If you write maker identify as IEN - 1315

CUT COSTS . . . FASTEN "ON THE DOUBLE" with the Chicago "214" DOUBLE RIVET SETTER

The "214" automatically feeds, inserts and clinches two rivets at a time . . . with speed that may mean a big saving in your fastening costs.

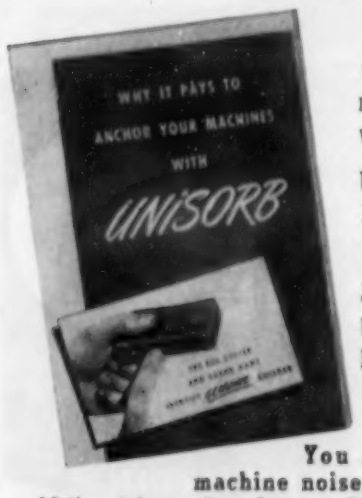
14" throat makes large assemblies easy to handle. For up to 9/64" diameter steel tubular rivets—lengths to ⅜". Quick Change Rotary Type Hoppers and Raceways permit a 5-minute changeover to rivets of different size. Adjustable anvils and riveting centers add to its versatility.

Ask us how the "214" can help you cut costs. Send a sample of your problem assembly (or blueprint) for a Free fastening analysis.

FREE CATALOG
contains valuable engineering information and rivet specifications plus illustrated descriptions of 26 Chicago Automatic Rivet Setters.

Chicago Rivet & MACHINE CO.
9602 West Jackson Boulevard, Bellwood (Chicago Suburb) Illinois
Branch Factory: Tyrone, Pa.

If you write maker identify as IEN - 1316



to mount your machines without...

bolts
lag screws
floor damage

Send for the UNISORB® Booklet

You reduce transmitted machine noise and vibration up to 85%, and you lengthen machine life, when you use UNISORB mounting pads. And there is no danger of the machines "walking" when mounted this easy way. Send for your copy of the booklet describing this modern way to mount machines.

RETURN COUPON TODAY!
the **FELTERS** company, 208 South St. Boston, Mass.
Please send me a copy of "Why It Pays to Mount Your Machines on UNISORB" — at no obligation to me.
Name.....Title.....
(Please Print)
Company.....
Address.....
City.....Zone....State.....

If you write maker identify as IEN - 1317

FASTENING . . Anchor lock nut stainless steel, duty to 1,200 deg. F.

Source: ELASTIC STOP NUT CORP.
2330 Vauxhall Road, Dept. IEN, Union, N. J.

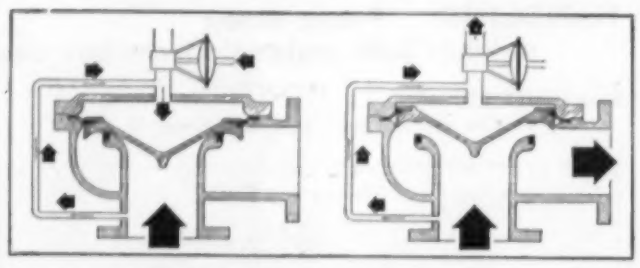
Combines 347 and 321 stainless steel

Three sizes are 8-32, 10-32 and 1/4-28 for the new Esna ZA1-W-1200 anchor lock nut. It represents new design of the previously developed ZA1-1200 nut in which Type-347 stainless steel, silver plate, was employed. The new nut retains the silver plated Type-347 steel in the nut body. It uses Type-321 unplated stainless steel for the base that retains the nut and forms the lug for welding or riveting. A little less than one-half the weight was removed from the original design and about 75 per cent of the critical material. The base and body are welded together.

If you write maker identify as IEN - 1318

VALVE . . Pilot controlled, diaphragm operated, 3 oz. to 150 lb.

Source: CONTROLLED FLOW VALVE CO.
805 Baltimore Ave., Dept. IEN, Kansas City 5, Mo.



Initially designed for pressure release

Inlet line pressure is employed to close this new valve by connection through a pilot line from the inlet side to the chamber above the main diaphragm. The pressure is applied or released by means of a pilot diaphragm or solenoid to close or open a line through which the pilot pressure can escape.

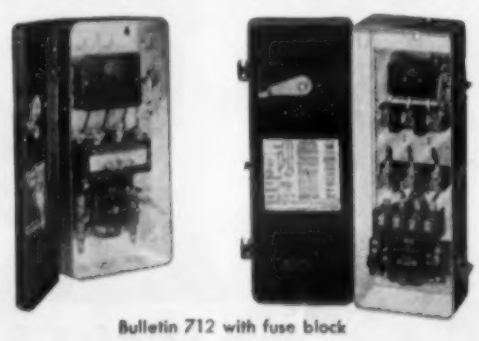
The angle body design is available in 2, 3, 4 and 6-in. pipe sizes for pressure from 3 oz. to 150 pounds. The control equipment can be removed and replaced without taking the main valve from the line.

If you write maker identify as IEN - 1319

Electronic equipment, worth $38,000, had been stolen from a warehouse. Then the owners installed a Dage television camera with a wide angle lens in the storage area and wired it to a standard receiver located where the storage area could be watched secretly. Company officials and the police saw an employee loading TV tubes into a waiting automobile. This is one of a great many applications for which Dage Electronics Corp., 69 No. Second St., Dept. IEN, Beech Grove, Ind., is prepared to supply its television equipment.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 1320



Bulletin 712 with unfused disconnect switch

Bulletin 712 with fuse block

QUALITY Combination Starters that Reduce Your Installation Costs

In applications where the Electrical Code specifies that a manual disconnect unit must be used . . . ahead of your automatic starters . . . don't use TWO separate units. Install an Allen-Bradley Bulletin 712 Combination Starter. It combines both units in one handy cabinet and makes a neater, compact, up-to-date installation. Available in many types of special purpose enclosures.

Allen-Bradley Co., 1312 S. Second St., Milwaukee 4, Wis.

ALLEN-BRADLEY quality MOTOR CONTROL

If you write maker identify as IEN - 1321

Need Rails—Switches—Frogs—Guard Rails or Track Tools? For best selections and prompt deliveries—try FOSTER—shipments of most items can be made from stocks in our five nationwide warehouses.

RAILS—New and Relaying Foster stocks are being replenished daily. Any items we did not have last week, we'll probably have next week. We match specifications and sizes to meet all your requirements on any job, new installations or replacements. *Call on Foster for all your needs for Industrial Track Equipment and Supplies.*

Write for Track Equipment Bulletin IE-2.

L. B. FOSTER CO.
CHICAGO 4, ILL. HOUSTON 2, TEX.
PITTSBURGH 30, PA. NEW YORK 7, N.Y.

If you write maker identify as IEN - 1322

Cost of wasted water @ $1.90 per M. cu. feet is $24.14. If the leak is in a hot water faucet then fuel cost for heating this wasted water will be: $88.91 if coal (9,879 lbs.)†; $91.02 if oil (792 gals.)†; $84.41 if gas (84,411 cu. ft.)†. These figures authenticated Hackensack Water Co.* and American Gas Association†.*

you can stop this needless waste now with Pat'd

'SEXAUER' "EASY-TITE" Faucet Washers

THE ONLY WASHERS BUILT LIKE A TIRE WITH FIBERGLAS RE-ENFORCEMENT

Fiberglas, with a melting point 1200° Fahrenheit, is unaffected by destructive heat of modern superheat water systems; has a tensile strength of 460 pounds per square inch; is non-absorbent and resists all chemicals.

'Sexauer' "Easy-Tites" outwear ordinary washers 6 to 1! . . . Now available with a greatly improved special duPont COMPOUND which adds substantially to longer, trouble-free washer service. This COMPOUND keeps washer from going to pieces under extreme hot water, withstands impurities and has superior tensile strength. 'Sexauer' "Easy-Tites" won't spread, split or "mush-out." They outlast all other washers by 6 to 1; save labor on 5 REPEAT REPAIRS, water and fuel and prolong fixture life.

Send for your

Free Catalog!

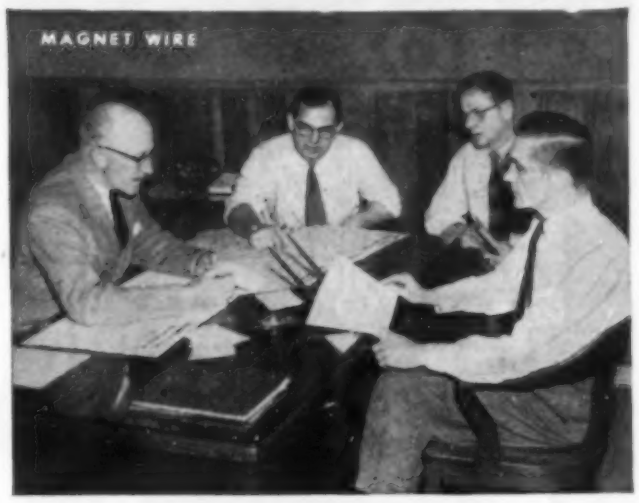
For water savings, lower maintenance and fuel costs, write for new Edition H. 'Sexauer' "Easy-Tite" washers just one in over 3,000 TRIPLE WEAR plumbing repair parts and tools. It's today's accepted guide for purchasing and maintenance men in thousands of PLANTS, INSTITUTIONS, AND GOVERNMENT AGENCIES that rely on 'Sexauer' repair materials.

'Sexauer' Maintenance Engineer at your service
There's a 'SEXAUER' TECHNICIAN within your quick call who offers a special SURVEY SERVICE that sets up schedule of exact replacement parts for your plumbing regardless of make or age. A postcard will bring him and your NEW catalog promptly.

J. A. SEXAUER MFG. CO., INC., Dept. K-24.
2503-05 Third Avenue, New York 51 *as advertised in THE SATURDAY EVENING POST*

SEXAUER
WORLD'S LEADING SPECIALISTS IN PLUMBING AND HEATING REPAIR PARTS

If you write maker identify as IEN-1324



Operation Quality

The men who make ANACONDA Magnet Wire are held strictly accountable for its quality. They meet daily. Their objective: to apply the most exacting program of quality control known to the industry today.

Many steady customers have used ANACONDA Magnet Wire for over 25 years . . . and in 80-90% of their windings. Its dependable quality helps them cut down incoming plant inspections. *Anaconda Wire & Cable Company, 25 Broadway, New York 4, N. Y.*

ANACONDA® —TODAY'S HEADQUARTERS FOR MAGNET WIRE

Class A: ENAMEL • FORMVAR • NYFORM • NYLON
Class B: VITROTEX® Class H: SILOTEX® *Reg. U. S. Pat. Off.

If you write maker identify as IEN-1325

A NEW POUR LAY CONCRETE WHICH RESISTS Corrosive Acids, Acid Gases, Salts and Solvents!

Highly recommended for use in floors, sewers, tanks, chimneys, sumps, linings, drains, pits, vats, foundations, towers, digesters! Stronger than ordinary concrete. Quick setting—ready to use in 24-48 hours. Easy to use, it may be poured into place and leveled off. Resistant to water, steam!

SAUEREISEN NO. 54

SPECIAL TRIAL ORDER
125 lb. Lot $15.00

The construction of acid-proof pit and piers like this are a natural for Sauereisen No. 54!

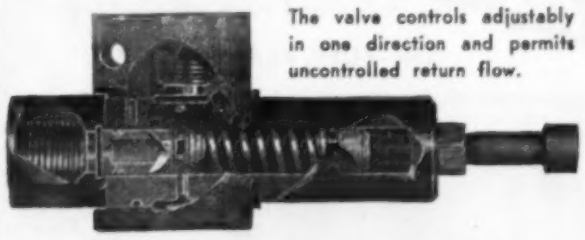
Free catalog with each order!
SEND ORDER TO DEPT. IEN.

SAUEREISEN CEMENTS COMPANY
PITTSBURGH 15, PENNSYLVANIA

If you write maker identify as IEN-1326

An adjustable FLOW REGULATOR

This newly perfected adjustable Flow Regulator holds at a constant rate even though the pressure fluctuates.



The valve controls adjustably in one direction and permits uncontrolled return flow.

The spring back piston in the housing is mounted in front of the adjustable screw. It carries a calibrated orifice; operates axially on change in inlet pressure so as to increase the throttling action.

Four sizes, 1/4, 3/8, 1/2, and 3/4 inch. Overall length, 4 1/2 to 7 1/2 inches. Adjustable over a 50% flow range. Maximum pressure is 3000 pounds.

Write for illustrated circular C

WATERMAN ENGINEERING Company
725 CUSTER AVENUE
EVANSTON, ILLINOIS

If you write maker identify as IEN-1327

HANDLING . . Vacuum equipment for metal sheets to 40 by 40 inches

Source: UNION TOOL CORP.
314-320 E. Market St., Dept. IEN, Warsaw, Ind.

Replaces hand labor

Pneumatic cylinder is mounted vertically on the base of this new Vacuum Lift to support an arm carrying a vacuum plate on one side of the column and a motor driven vacuum pump on the other. The arm assembly is raised or lowered by air pressure applied in the cylinder from a shop source.

The arm is rotated horizontally through a 180-deg. arc by a second pneumatic cylinder assembled horizontally at the base line. Pivot point for the arm is at the center of the vertical cylinder. It is mounted on ball thrust bearings, the cylinder head being hardened to form the top bearing race.

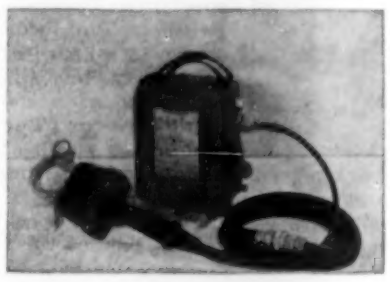
The equipment will handle any non-porous metal sheet measuring not more than 40 by 40 inches. It can pick up and deposit 1 to 6 sheets per min. at any level to 36 in. above the floor. Air consumption, per pick-up and turn cycle, is about 60 cubic feet.

Control can be specified by push button on a separate unit convenient for the operator. Automatic cycle also is available. Required floor space is 36 by 48 in. for the base with the arm extending out about 4 feet. Height is 6 feet. Weight is 1,800 lb. for the new equipment.

If you write maker identify as IEN-1328

METER . . Hook-on recorder traces alternating current and voltage

Source: GENERAL ELECTRIC CO.
Dept. 6X-201, Schenectady 5, N. Y.



For permanent record

Type CF-7 is a new hook-on volt-ammeter with which alternating current can be measured and recorded on both insulated and non-insulated conductors in circuits to 8,700 volts. The instrument employs a self-supporting hook suitable for conductors to 2 in. in diameter. No auxiliary equipment is required since the recorder measures in three ranges to 150, 300 and 750 volts by setting a range selecting switch. Overall accuracy is within 3 per cent of full scale on measurements below 625 amperes. The rectifier type voltmeter is accurate within 3 per cent of full scale on all voltage ranges.

The equipment consists of a hook-on current transformer, a connecting lead and an inkless recording volt-ammeter. The transformer is hooked around the line and the recorder is connected to a 110/220-volt ac. source. The equipment weighs about 19 lb. including a 10-ft. lead. Current ranges are 15, 75, 150 and 750 amperes.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 59

If you write maker identify as IEN-1329

Stop CORROSION in your Steam System WITH CORAVOL

When fed to your steam system, **CORAVOL**: (1) *prevents* corrosion in steam and condensate lines, (2) *cleans out* clogging rust deposits resulting from previous corrosion. Thus, **CORAVOL** protects lines, increases the effectiveness of heat transfer surfaces, restores original capacity of lines and the operating efficiency of valves and traps.

CORAVOL is part of a complete technical service which provides special chemical formulas for: Boiler Feed Water . . . Foam Prevention . . . Hot Water Supply . . . Refrigerating Brine . . . Cooling and Condenser Water . . . Rapid Scale Removal . . . Coagulation . . . Algae Control.

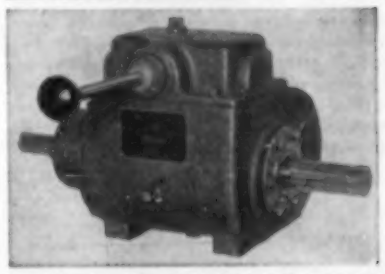
Write TODAY to Western Chemical Company, 715 Washington Street, Kansas City, Missouri—for complete FREE data about the **CORAVOL** process.

WESTERN CHEMICAL CO.
715 WASHINGTON KANSAS CITY, MO.

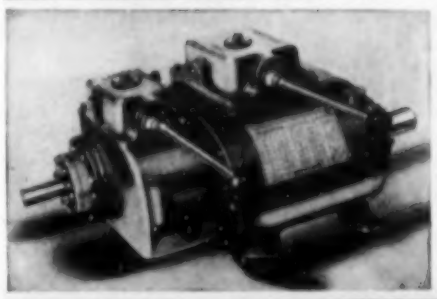
If you write maker identify as IEN-1330

plate or platform mounting

9000-B (1-5 H. P.) 5 H. P. capacity with r.p.m. **Gear ratios:** 1:1 - 2:1 - 3:1 - 4:1. Special ratios at extra cost.



8100-B (5-10 H. P.) 10 H. P. capacity with input speed of 900 r.p.m. **Gear ratios:** 1:1 - 2:1 - 3:1 - 4:1. Special ratios at extra cost.



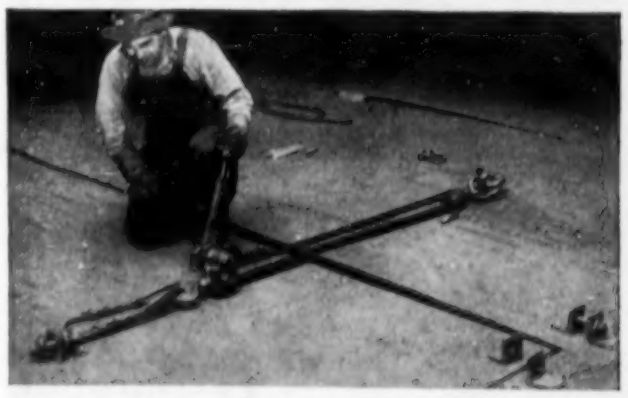
9300 (30 H. P. capacity with input speed of 900 r.p.m.) 8 speed Changes in Geometric Progression of 1.29 (Total reduction of 6:1).

Send for catalog and complete information

up to 100 h. p. **WESTERN TRANSMISSIONS**
WESTERN MANUFACTURING CO. — EAST SYRACUSE — ROCHESTER, MICHIGAN

If you write maker identify as IEN-1331

There's a Yale hoist for every lifting job!



Locating steel plates on ship deck is just one of the countless jobs done quicker and easier with a YALE PUL-LIFT.

• It would be impossible to list all the different *lifting* and *pulling* operations performed every day with the YALE Pul-Lift! But, it's a sure thing that, wherever this more versatile tool is used, a maintenance or construction job is being done more efficiently than ever before... in less time... at less cost! Exclusive YALE-engineered design provides capacities up to 15 tons. And, the universal ratchet action simplifies operation ...makes the Pul-Lift as easy to handle as the most basic wrench. Investigate... find out how a YALE Pul-Lift can save you time, money and manpower. *Call your local Yale Industrial Distributor for complete information*... he's listed in the classified pages of your local phone directory under Hoists, Industrial.

Yale Hoists are sold exclusively through INDUSTRIAL DISTRIBUTORS

YALE*

MATERIALS HANDLING EQUIPMENT
*Registered in U. S. Patent Office

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The YALE & TOWNE Manufacturing Co., Dept. 362
Roosevelt Blvd. & Haldeman Ave., Philadelphia 15, Pa.
I'm interested in lifting for less with a YALE Hoist.
☐ Please have your local Hoist Distributor call on me.
☐ Please send my FREE copy of the new YALE Hoist Users & Buyers Guide.

Company_____
Name_____ Title_____
Street_____ City_____ State_____

In Canada write: The Yale & Towne Manufacturing Co., St. Catharines, Ont.

GAS, ELECTRIC, DIESEL LIFT TRUCKS • WORKSAVERS
HAND TRUCKS • HAND AND ELECTRIC HOISTS • PUL-LIFTS

If you write maker identify as **IEN - 1333**

Rolling Steel Doors

Manually, Mechanically, or Power Operated

Below you see Mahon Power Operated Rolling Steel Doors installed in six truck openings to a motor freight loading dock. Another Mahon Power Operated Rolling Steel Door 17'-0" x 22'-0" is installed in a railroad opening in connection with this same loading dock. Rolling Steel Doors occupy no usable space either inside or outside the opening . . . they create no overhead obstructions—cranes may be employed to handle materials adjacent to the door opening. Quick opening, quick closing, vertical roll-up action saves valuable time . . . all-metal construction provides permanence, greater protection against intrusion and fire, and assures you a lifetime of trouble-free service. Write for Catalog containing complete information including Specifications.

THE R. C. MAHON COMPANY
Detroit 34, Michigan • Representatives in All Principal Cities

MAHON

If you write maker identify as **IEN - 1334**

WEBB *hand pushed* **TROLLEYS**

Webb Hand Pushed Trolleys are sturdily built for long life and minimum maintenance. Hardened steel wheels equipped with retainer type ball bearings assure long wearing properties and ease of operation. Triple labyrinth seals keep lubricant in and dirt out. Side guide rollers effectively eliminate binding and excessive wear, especially when moving loads around curves. For simple, inexpensive and easy handling of materials, use Webb Hand Pushed Trolleys.

P-2530
4" to 12"
I-BEAM;
1 Ton
Capacity

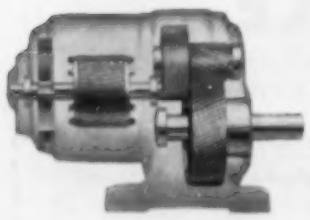
For Bulletins and Prices, write to:

JERVIS B. WEBB CO.
Conveyor Engineers and Manufacturers
8915 ALPINE AVE. • DETROIT 4, MICH.
Offices in Principal Cities

If you write maker identify as **IEN - 1335**

MACHINERY MFR. CUTS PRODUCTION TIME 50%

Using Slo-Speeds on cold metal processing equipment we manufacture, we show savings of approximately 50% in construction costs, reports Mr. George H. Slagle, owner, Slagle Beryllium Co., Havertown, Pa. . . . and our customers gain an important economic advantage through lower equipment costs.



20-page illustrated catalog... Sterling Speed-Trol, Slo-Speed, Klosd and Klosd-Tite Electric Power Drives. Write for catalog No. B-422.

STERLING SLO-SPEED OUTSTANDING FEATURES:

Simplified gear system—balanced design—compact—rugged — highly efficient — abundant lubrication—low output shaft—positive oil seals — Herringbone Rotor — protected — streamlined — direct through ventilation — quiet operation — AGMA speeds — extremely long life — every unit will operate in any position.

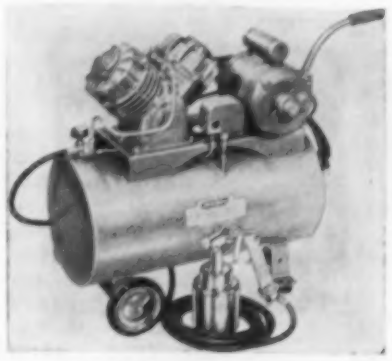
STERLING ELECTRIC MOTORS

Plants: New York City 51; Chicago 35; Los Angeles 22; Hamilton, Canada; Santiago, Chile. • Offices and distributors in all principal cities.

If you write maker identify as **IEN - 1336**

PAINTING . . Compressor, motor, gun, hose and wheel mounted receiver

Source: W. R. BROWN CORPORATION
2701 N. Normandy Ave., Dept. IEN, Chicago 35, Ill.



Sprayer No. 450

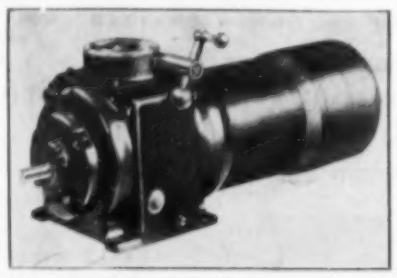
Air is compressed and delivered at 30 to 45 lb., under control of a pressure switch, by this new Model-450 motor driven equipment. The air is employed to operate a container equipped spray gun at the end of a 15-ft. hose. The motor rates ½ hp. and operates on 110-volt 60-cycle ac. It is provided with a 10-ft. cord and plug.

The compressor is the company's diaphragm design. Two compressor cylinders are mounted in air cooled vee assembly on the horizontal wheel equipped receiver. It rates 11½ gallons. The wheels are removable when the equipment is to be employed in stationary installations. List price complete is $169.

If you write maker identify as **IEN - 1337**

DRIVE . . Variable speed unit, ⅛ to ¼ hp., brake equipped motor

Source: GRAHAM TRANSMISSIONS INC.
Dept. IEN, Menomonee Falls, Wis.



For instant stop

New assembly, including a motor with built-in magnetic disc brake, is now available in the smaller sizes of the company's continuously variable speed drive. The brake measures 5 in. in diameter by a little less than 3½ in. in length. It mounts on the end of the motor. The drive comprises a single assembly for mounting by means of four bolt holes. Braking action is immediate upon opening the motor circuit so the drive will not coast.

Speed variation, all in one direction or reversible to specification, is by axial movement of a ring on a tapered cone. This movement is by a local or remote manual, mechanical, pneumatic or electric control. Construction includes self-lubrication and overload protection.

If you write maker identify as **IEN - 1338**

Hydroscale trade names a hydraulic crane scale developed some years ago by Hydroway Scales, Inc., 20624 W. 8-Mile Road, Dept. IEN, Detroit 19, Mich. The scale is available now in equivalent sizes and capacities to read from 500 to 50,000 kilograms. Sizes to 2,000 kg. are provided with 12-in. dials. Larger sizes, to the maximum, can be specified with a 24 or 30-in. dial. Each scale is fitted with an eye to engage a crane hook and with a hook to pick up the load.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as **IEN - 1339**

MAINTENANCE CONTROL *Simplified*

NEW Illustrated Bulletin on request

Step-by-step procedure providing positive control . . . with little clerical work

. . . Maintenance Request and/or Maintenance Order . . . for all maintenance jobs . . repairs, new work, inspection, etc.

. . . Maintenance Supervisor's Order Control . . . progress or follow-up records . . . information for management reports, etc.

. . . Scheduling and Job Assignment . . . . assignment and instructions to Craft chiefs and foremen . . . . . by Craft chiefs and foremen to workers and crews.

. . . Job Costs, daily and final.
. . . Material Control.
. . . Tool Crib Control.

McCaskey procedures illustrated and described in this NEW folder are readily adaptable to your individual requirements.

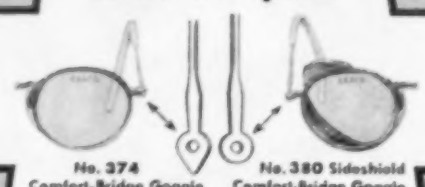
WRITE TODAY FOR YOUR COPY
OF ILLUSTRATED BULLETIN A-699 IEN

McCaskey INDUSTRIAL CONTROLS
PRODUCTION · INVENTORY · TOOLS · COSTS · MAINTENANCE
THE McCASKEY REGISTER DIV.,
Victor Adding Machine Co.
ALLIANCE, OHIO
Galt, Canada Watford, England

If you write maker identify as **IEN - 1340**

CESCO *RIGHT... before your Eyes!*

NEW Temples



No. 374 Comfort-Bridge Goggle — No. 380 Sideshield Comfort-Bridge Goggle

Now, CESCO Comfort-Bridge Goggles have new symmetrical tip temples which are interchangeable—right or left.

These new temples are better looking and have greater strength at the end-piece joint where breakage usually occurs. That's because the flat bar of the temple is at a right angle to the tip.

Attractive flesh-colored plastic insulators are easy to replace. Closed end keeps shaft from poking through. Workers like to wear CESCO Safety Goggles with these new temples. Repairs are easier, service costs lower. They're *"RIGHT... before your Eyes."*

Send TODAY for CESCO literature

CHICAGO EYE SHIELD COMPANY · 2326 Warren Boulevard, Chicago 12, Illinois

CESCO FOR SAFETY

OFFICES IN: Atlanta, Birmingham, Boston, Buffalo, Cincinnati, Cleveland, Columbus, Dallas, Detroit, East Orange, Houston, Indianapolis, Kansas City, Knoxville, Little Rock, Los Angeles, Mexico City D. F., Milwaukee, Montreal, Peoria, Philadelphia, Pittsburgh, Salt Lake City, San Francisco, Spokane, St. Louis, St. Paul, Toledo, Tulsa, Wichita

If you write maker identify as **IEN - 1341**

FOR all those interested in extremely thin stainless steel sheet and strip . .

VERI-THIN *MicroRold*

The Washington Steel Corporation is now producing Veri-Thin MicroRold stainless steel sheet and strip, available in 18-8 grades as follows:

36" wide sheets	.006" to .009"	2B or 2D Finish
30" wide sheets	.004" to .009"	2B or 2D Finish
24" wide Max.	.0015" to .009"	Bright Annealed

Veri-Thin MicroRold Type 430 is available as follows:

30" and 36" widths	.009"	2B Finish
24" wide Max.	.0015" to .009"	Bright Annealed

Ask your steel warehouse distributor about Veri-Thin MicroRold stainless sheet and strip.

WASHINGTON STEEL CORPORATION
WASHINGTON, PENNSYLVANIA

If you write maker identify as **IEN - 1342**

THE RIGHT BOX CAN DO A JOB FOR YOU

Small parts handling made easier, cleaner and more efficient with—

Lite-TUFF PLASTIC BOXES

Lite-TUFF Standard Boxes and Containers of Non-Flam* light weight plastic made of approved material are no fire hazard. They are available in a wide variety of compartment arrangements.

LOW DIE COST ON CUSTOM MADE

Very tough—will not crack or shatter in normal use.
Stainless steel hinges.
Resistant to most chemicals—samples supplied for tests.
May be beautifully heat embossed.
All transparent or color combinations.
Make your own compartment layout on our PLOT PLAN Sheets.
State your problem—let us solve it.

Full information and Plot Plan Sheets sent upon request . . . Dept. A1

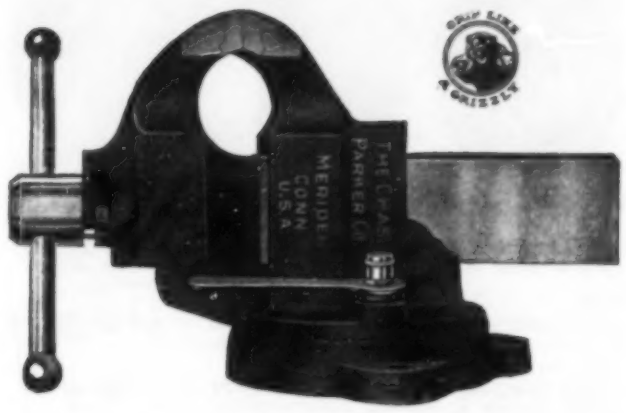
SHOE FORM CO., INC.
Auburn, New York

*Reg. U. S. Pat. Off.

If you write maker identify as IEN - 1343

PARKER VISES

STOCKED BY DISTRIBUTORS EVERYWHERE



The Complete Line

Machinists • Top Swivel Jaw
Combination Pipe • Hinge Pipe
Woodworkers • Utility

Write for Catalog

Sold Only Through Distributors

THE CHARLES PARKER CO., MERIDEN, CONN.

If you write maker identify as IEN - 1344

ELECTRIC FEEDRAIL®

Reliability

will keep your cranes and hoists rolling!

FEEDRAIL standardized units make it easy to power crane or hoist runs—including curves, slide switches, transfers, turntables and spurs. Feedrail's free-running trolleys roll as one with cranes and hoists.

RELIABILITY is one of the big reasons Feedrail is so widely favored for powering electric cranes and hoists. User after user will tell you—*"We've never had a minute's trouble with our Feedrail system."* That's because Reliability is inherent in Feedrail's expertly-engineered, trouble-eliminating design and rugged high-precision construction.

FEEDRAIL RELIABILITY is your insurance against crane and hoist stoppages. So long as your power source stays alive, Feedrail will keep them rolling. What's more, Feedrail assures maximum safety to personnel ... easy adaptability to changing production requirements . . . a very minimum of maintenance. And, its prefabricated units are so simple to install!

WRITE FOR DESCRIPTIVE BULLETIN
Address request to Dept. N-2

SOLD BY MORE THAN 1,000 ELECTRICAL DISTRIBUTORS COAST TO COAST

53-3A

Never Becomes Obsolete

ELECTRIC FEEDRAIL

FEEDRAIL CORPORATION
Subsidiary of Russell & Stoll Company, Inc.
125 BARCLAY STREET • NEW YORK 7, N. Y.
SPECIALLY QUALIFIED REPRESENTATIVES IN PRINCIPAL CITIES

If you write maker identify as IEN - 1346

FEEDING . . Electric vibrating unit advances work pieces on circular path

Source: DETROIT POWER SCREWDRIVER CO.
2801 W. Fort St., Dept. IEN, Detroit 16, Mich.

Around, up and out

DPS Bowl Feeder designates new parts feeding equipment that the company has added to its previously developed Barrel Feeder. The new equipment is particularly suited for work that will not withstand tumbling such as finish ground parts and fragile pieces. The two designs cover practically all requirements for small parts feeding to machines.

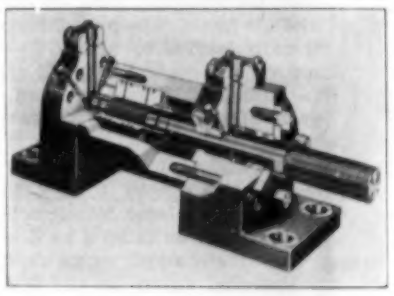
The work is filled into the circular bowl of the new unit where electric vibrating action causes the pieces to move outwardly radially and to align themselves in a spiral path leading upward on the inside surface of the bowl. They move along this path, passing a diverter that will return them to the bowl if they are not correctly located, to issue at a discharge point at the top.

The bowl can be fitted with one or more independent paths. Two are shown on the unit in the illustration. Speed along the path can be regulated by adjusting the vibrating action. The equipment is available with bowls measuring 5 to 30 in. in diameter. Operation can be specified on 110, 220, 440-volt 60-cycle ac. to meet requirements.

If you write maker identify as IEN - 1347

CYLINDER . . Hydraulic design, 1½ to 12 in. bore, specified stroke

Source: HYDRAULIC PRESS MFG. CO.
Marion Road, Dept. IEN, Mount Gilead, Ohio



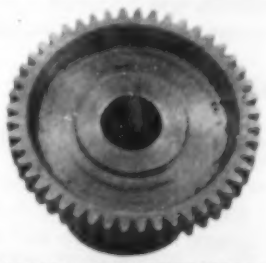
Catalogs 701, 721, 741

The company announces availability of three new series of power cylinders in a range of standard mountings as well as in special assemblies to specification. Model 300 is designed for 150-lb. air or 300-lb. oil hydraulic service. Model 2000 and Model 3000 rate 2,000 and 3,000-lb. oil hydraulic pressure respectively. Standard units in all three series also are available for water hydraulic service.

Features in the construction include spring loaded piston rod packings, interchangeable mounting design to meet changing service requirements, end covers made of steel, ground and polished steel piston rods that also can be specified chromium plated, hardened, or hardened and chromium plated. Plain or cushioned action is available. Pipe connections are made to separate flanges which can be removed from the cylinder heads without taking the cylinder out of its operating position.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 1348



BEFORE PRESSURE-BLASTING

AFTER PRESSURE-BLASTING

REMOVE BURRS FROM PRECISION GEARS . . . NO WIRE BRUSHING, NO HAND FINISHING!

MODEL A . . . ONE OF 4 STANDARD UNITS. CUSTOM MACHINES DESIGNED TO FIT SPECIAL REQUIREMENTS.

ONLY PRESSURE BLAST GIVES YOU 2-SPEED WET-BLASTING

FREE . . . Learn what PRESSURE BLAST can do for you! Die and Mold Polishing, Blending Grind Lines, Deburring, Heat Treat Scale Removal, Honing of Cutting Tools, Pre-plating Cleaning . . . Hundreds of proven, money-saving applications!

Write for our new 8 page fully illustrated Booklet . . . or send samples of work you want tested to:

The ENO-PLATE Company, Incorporated
747-3 Windsor Street
Hartford 5, Conn.

If you write maker identify as IEN - 1349

THIS FRACTIONAL H.P. STARTER HAS ALL THE FEATURES!

- Quick-make, quick-break contact mechanism
- Single or double pole construction
- Double-break contacts of fine silver
- Modern styling
- Straight-thru wiring with convenient terminals—generous wire space
- Dependable melting alloy type overload protection—trip-free
- Definite trip indication
- Interchangeable overload relay units accessible from the front
- Open type starter can be used with standard switch box and flushplate

RATINGS:
Double pole: 1 H.P., 115—230 volts A.C. or D.C. Single pole: 1 H.P., 115—230 volts A.C. and ½ H.P., 115—230 volts D.C.

Write for Bulletin 2510A. Address Square D Company, 4041 N. Richards St., Milwaukee 12, Wisconsin.
ASK YOUR ELECTRICAL DISTRIBUTOR FOR SQUARE D PRODUCTS

SQUARE D COMPANY

If you write maker identify as IEN - 1350

MAINTENANCE TIPS FOR YOU

in every issue of the

"NEOPRENE NOTEBOOK"

New products made of neoprene, Du Pont's tough chemical rubber.

On-the-job reports proving neoprene's superiority in the field.

New engineering developments showing neoprene's wide range of applications.

DU PONT

Better Things for Better Living
. . . through Chemistry

MAIL READER-SERVICE CARD FOR YOUR FREE SUBSCRIPTION

NEOPRENE

The rubber made by Du Pont since 1932

If you write maker identify as IEN - 1351

write for this 128-page manual

RUBBER-INSULATED *high voltage* POWER CABLE

up to 35,000 volts

If you are joining the trend to high voltage distribution in your plant, you'll want this valuable reference book. It's your complete guide to shielded high voltage, rubber-insulated cable design, including installation, splicing and terminating techniques. Write for Bulletin IE-1075 to The Okonite Company, Passaic, New Jersey.

OKONITE *insulated cables*

2194

If you write maker identify as IEN-1352

A Motor for LOW SPEED OPERATION

If you are now manufacturing a product or developing a product where you need motion at slow speed, here is the motor for you. Hundreds of thousands now in use on cooking appliances, vending, coin operated, amusement, and advertising displays.

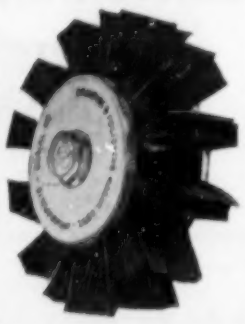
These AC gear motors are precision built and are being manufactured in volume for immediate delivery. For further information, send the requirements of your application to us. Special motors are built to meet your new product needs. Write today for data sheet.

MotoRESEARCH COMPANY
1600 JUNCTION AVENUE
RACINE, WISCONSIN

Designers and Manufacturers of
SPECIAL INDUCTION MOTORS

If you write maker identify as IEN-1353

NEW VONNEGUT POLISHING HEAD WEIGHS JUST TWO POUNDS



FITS MOST ANY POWER TOOL

Now — a truly "bantam weight" Vonnegut Polishing Head for polishing curved and formed surfaces. (An excellent deburring tool also.) Its small, 6½" diameter lets it get into concave areas of smaller radii that can not be reached with the 16 and 32 brush heads. The twelve strips of abrasive—each only 1½" wide—and the smaller diameter requires less power, permitting use of smaller portable tools than needed for the larger heads. The combination—lighter head and tools—makes it ideal for sustained portable operations. Write for details.

Grinding and Polishing Machinery Corp.
SUCCESSORS TO VONNEGUT MOULDER CORPORATION
2530-D Winthrop Avenue, Indianapolis 5, Indiana

If you write maker identify as IEN-1354

NEW! Porter-Cable ½" DRILL with 7 Grip Positions

HERE'S a new standard duty ½" drill you can really "bear down on." Its 2-position auxiliary handle permits extra leverage on the tough jobs. Its exclusive rear handle adjusts horizontally or vertically so you can lean into the work... you can even remove the rear handle—or both handles—and concentrate your whole strength behind the drill body.

Features: heavy, precision-ground Jacobs gear-type chuck . . . double compound reduction gears . . . combination ball radial and thrust bearings. U.L. listed.

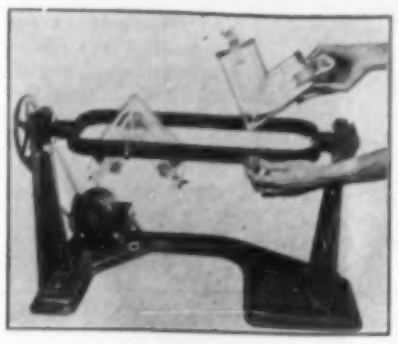
At Your Porter-Cable dealer's **$48.95**
(New ¼" Drill $29.95)

PORTER-CABLE Machine Company
2022 N. Salina Street, Syracuse 8, N. Y.
Manufacturers of Speedmatic & Guild Electric Tools
In Canada write: Strongridge Ltd., London, Ont

If you write maker identify as IEN-1355

MIXING . . Motor driven blender for dry materials of varying character

Source: PATTERSON-KELLEY COMPANY
385 Warren St., Dept. IEN, East Stroudsburg, Pa.



Bulletin 405

Blender shells made of transparent Lucite are now available in load capacities of 1, 2 and 4 pints, with quick opening dust and water tight cover plates, in the company's line of Twin-Shell equipment, previously described IEN-7502-52. Two of the new small units can be applied in a yoke that mounts in the standard 4 and 8-qt. motor driven frame. Individual blenders can be removed from the yoke after removing a thumb screw.

Batches of less than a pint, as well as capacity loads, can be blended successfully in the small unit. The blending action is sufficiently gentle so abrasive materials will not mar the plastic surface. The action consists of alternate dividing and joining movement as the blender rotates with the yoke.

If you write maker identify as IEN-1356

CONTROL . . Gas flame pilot shuts down gas burner on pilot failure

Source: PARTLOW CORPORATION
2 Campion Road, Dept. IEN, New Hartford, N. Y.

The control housing

Series 700 is new design in the Saf-T-Flame pilot control for gas burners, previously described IEN-2028-39. The equipment consists of a control cabinet, transformer, pilot burner and air mixer. The pilot is electrically ignited by a push button on the control housing or, in automatic design, mechanically after a preset purge time delay.

Electrodes in the pilot assembly are located in the path of the pilot flame which acts as a conductor as long as it is burning properly. The circuit, thus maintained, actuates a relay that controls electrically operated valves in the fuel line. When the circuit is opened, due to pilot flame failure, the relay acts and the fuel line valves closes. High voltage is employed on the electrodes so the pilot provides self-lighting action. Operation is on 110-volt 60-cycle ac.

If you write maker identify as IEN-1357

If you need specially designed recording charts, either circular or strip, you may want to get in touch with Technical Charts, Inc., 189 Van Rensselaer St., Dept. IEN, Buffalo 10, N. Y. This company has assembled a special engineering staff to work with you and the instrument makers to produce any design of chart that may be required.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN-1358

A PAID NEWS ADVERTISEMENT BY MATHEWSON MACHINE WORKS

NEW ADJUSTABLE DRILL JIG eliminates layout; cuts drilling time

Used for drilling holes through round stock and hex stock from ¼" to 2" and cap screws from ¼" to 1¼", the new Mathewson Adjustable Drill Jig eliminates layout and can cut drilling time on small lots to a fraction. And it eliminates the costs of special jigs for larger quantities. Holes for cotter pins, set screws, drive pins, for bayonet joints, oil holes in tubular sections, and wiring holes in cap screws, are all typical of the operation that can be done more economically with this jig. Hole diameters range from .052" to .531", using your A.S.A. standard slip bushings. The hardened V-block has two 60-degree V's for centering round or hexagonal stock, one for ¼" to 21/32" diameter, one for 21/32" to 2" diameter. Adjustable stock for locating work longitudinally for drilling any distance from end, may be used on either side. Adjustable bushing carriers hold slip bushings and clamp work securely. Jig highly successful in permitting use of inexperienced drill operators. For circular write to **Mathewson Machine Works**, 26 Hancock Street, Quincy, Mass.

If you write maker identify as IEN-1359

KEEP ALL YOUR TRUCKS IN SERVICE ALL THE TIME

with Nutting Demountable RUBBER TIRED WHEELS

JUNIOR CATALOG 54-G

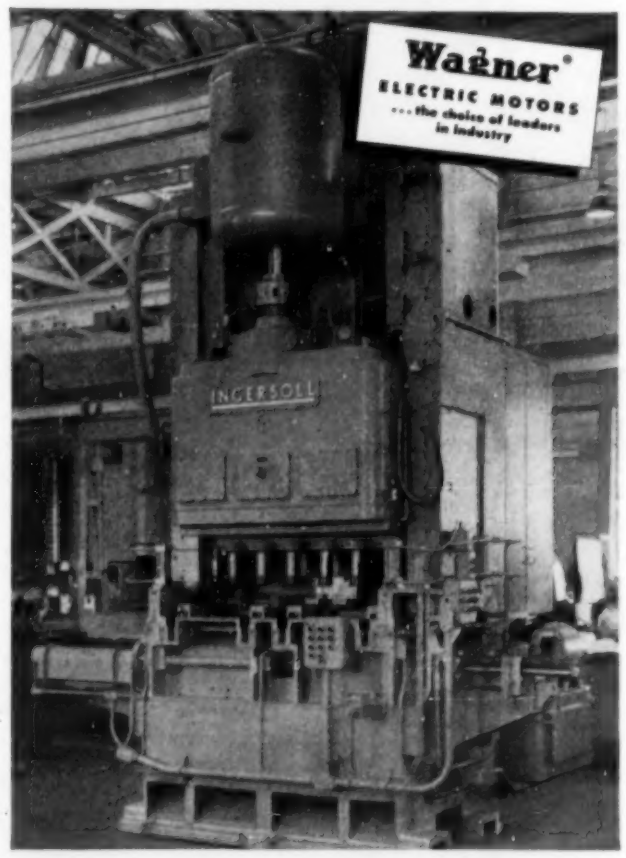
You don't have to buy expensive complete new wheels when tires are worn! Bolted assembly permits tire replacement in minutes—No special tools!

Next time you need new wheels, casters or trucks, change to Nutting Demountables. No stretch or creep under severest service—and only Nutting, pioneers in the field, has sizes and capacities for every type of truck or trailer.

For details and a representative listing of the most complete floor truck line in America write for Junior Catalog 54G . . . or consult classified phone directory under "Trucks" or "Casters" for nearest Nutting representative.

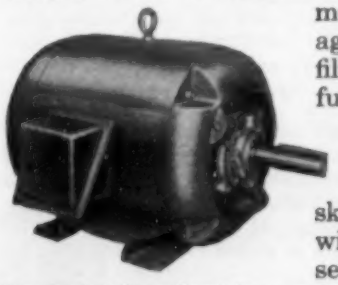
SINCE 1891 **Nutting TRUCK AND CASTER CO.**
2015 DIVISION ST., FARIBAULT, MINN.
Export Sales: School International, Inc., 4237 North Lincoln Ave., Chicago 18, Ill.

If you write maker identify as IEN-1360



WAGNER MOTORS assure less machine tool down-time!

Continuity of motor operation is all-important if your machine tools are to give the performance you need for high-speed production. The extra protection built into Wagner totally-enclosed fan-cooled motors means less down-time for any machine tool on which they're installed. These motors are fully protected against damage from steel filings, chips, dust, dirt, fumes, and moisture. No maintenance other than periodic lubrication is required. A skilled Wagner engineer will be glad to help you select the right motors for your next installation. Just call the nearest of our 32 branch offices or write us.



Wagner totally-enclosed fan-cooled motors are available in either steel or cast-iron frames, in standard or explosion-proof types, single-speed or multi-speed, single-, 2-, or 3-phase, up to 250 hp.

Wagner Electric Corporation
EST. 1891
6414 PLOUMOUTH AVENUE
ST. LOUIS 14, MO.
ELECTRICAL EQUIPMENT AND AUTOMOTIVE BRAKE PRODUCTS

If you write maker identify as IEN - 1362

ONE OF AMERICA'S BROADEST LINES OF HORIZONTAL ALL-PURPOSE PUMPS

PEERLESS PUMPS

OTHER PEERLESS TYPES:

Close-coupled & flexible-coupled pumps ¼ to 150 hp—up to 5500 gpm

Write today for Peerless Bulletin No. B-2300. Illustrated with views of all pumps in the Peerless Fluidyne line. Includes sectional drawings, elevations, dimensional data and head-capacity characteristics. You can buy and apply right from this bulletin.

PEERLESS PUMP DIVISION
FOOD MACHINERY AND CHEMICAL CORPORATION

Los Angeles 31, California and Indianapolis 8, Indiana
Offices: New York, Chicago, St. Louis, Atlanta; Dallas, Plainview and Lubbock, Texas; Fresno, Los Angeles; Phoenix; Albuquerque, N. M.; Tulsa

If you write maker identify as IEN - 1363

MICRO Precision Switches

How much is a new production idea worth?

Every month *MICRO TIPS*, a lively interesting idea forum, offers plant engineers, electricians and maintenance men new, practical ideas to production short cuts.

For years, plant operating men have been putting new life in old machines by installing MICRO precision switches to make them safer, more automatic and more productive.

These include the use of MICRO switches as limits, safeties and interlocks on almost every conceivable type of plant equipment. Special MICRO switches are available for use in explosive atmospheres or other hazardous locations.

MICRO TIPS is the place to read first hand experiences of other plant operating men. Just one new idea on how to make your equipment produce more can be invaluable. The cost? *MICRO TIPS* costs you nothing. Just send in your name and address and ask for *MICRO TIPS* today. You'll be glad you did.

MICRO switches are easy to buy. Look under "Switches, Electric" in your phone book. One of our 176 distributors is as close as your phone.

MICRO SWITCH
A DIVISION OF MINNEAPOLIS-HONEYWELL REGULATOR COMPANY
FREEPORT, ILLINOIS

If you write maker identify as IEN - 1365

BEARING . . Miniature ball design can be sealed against dirt and moisture

Source: LANDIS & GYR INC.
45 W. 45th St., Dept. IEN, New York 36, N. Y.

Data Sheet R2-19

Sealed and plain assemblies are available in a new Type RF-864 assembly and in R-2 size in the company's line of miniature ball bearings. Outside diameter measures 0.3750 inch. Bore is 0.1250 inch. Width is 0.1562 inch. The line includes the two basic constructions and 10 types with a one-piece snap type ball retainer for low torque medium speed applications and with a two-piece ribbon type retainer for high speed duty in the intended application.

The lubricant forms a film by capillary action between the tapered outer surface of the inner race and the edge of a precision closure secured in the outer race in the sealed assembly. The film seals against entrance of dirt and prevents loss of lubricant. Type RF designates the sealed assembly. Type R is the plain assembly. Both are available in ABEC 1, 3 and 5 tolerances to meet application requirements.

If you write maker identify as IEN - 1366

CORROSION PROOFING . . Liquid protects metal against acids, alkalis

Source: CARBOLINE COMPANY
329-33 Thornton Ave., St. Louis 19, Mo.

Technical data in Bulletin 700

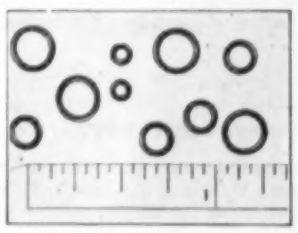
Neoprene 100 is a new liquid coating for application on metal surfaces. It cures at room temperature, produces a film measuring 10 to 20 mils in thickness. A primer and three finish coats are recommended for areas subjected to continuous splash of corrosive liquids. These four coats produce a $\frac{1}{32}$-in. solid protective layer.

Application follows wire brushing or sandblasting over corroded surfaces. Application can be made on previously painted surfaces if the primer adheres to the existing paint and does not "lift" it.

If you write maker identify as IEN - 1367

SEALING . . Miniature O-rings are made by molding synthetic rubber

Source: STILLMAN RUBBER CO.
5809-13 Marilyn Ave., Dept. D, Culver City, Calif.



Laboratory tested

Three stock sizes measure 0.029 by 0.040 by 0.109 in. to 0.100 by 0.070 by 0.240 in. in this new Series-6227 line of miniature O-rings. The units are suited for moving and stationary seals in pumps, valves, nozzles, hydraulic and pneumatic equipment. The synthetic rubber compound is characterized by its low running friction.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 80

If you write maker identify as IEN - 1368

Cut eye-strain IN ALUMINUM WELDING

Here's how:

★ ***SPECIAL TINT***—only slightly opaque—filters glare in aluminum welding. Acetylene, hydrogen flame and burning flux look like a pale cone of light at burner tip of welder's torch.

★ ***EYE STRAIN GONE***—mistakes reduced — production speeds up!

★ ***SCIENTIFICALLY GROUND***—The Burt-Weld Lens is polished and optically perfect. Fits any goggle taking 50 mm. round lens.

Write for Bulletin and Prices

with *McDonald*
BURT-WELD LENS

B. F. McDONALD CO.
Manufacturers & Distributors of Industrial Safety Equipment
5721 WEST 96TH ST., LOS ANGELES 45, CALIF.
Other Offices in San Francisco & Houston

If you write maker identify as IEN - 1369

INDUSTRIAL INKS To Mark Anything!

Whatever the substance, Phillips has an ink to mark it permanently and legibly—or can make one. Marking experts insist on "Clear Print" Wood Block Stamp Pads and Opaque Inks. They get clear, sharp, fast-drying impressions. Also inks for brush, pen, stencil or machine application available in a variety of colors and quantity containers.

★ Quick Laboratory Service On Your Problem Markings

★ To Permanently Mark . . . Metals, Plastics, Glass, Wood, Paper, Leather, Ceramics—glazed, varnished or lacquered surfaces and virtually every other known material.

L. A. PHILLIPS, President
PHILLIPS PROCESS CO. INC.
192 MILL STREET
ROCHESTER 14, N. Y.

If you write maker identify as IEN - 1370

NOW 2 in 1 { SLIDE RULE and CALCULATOR

PAYS FOR ITSELF IN TIME SAVED!

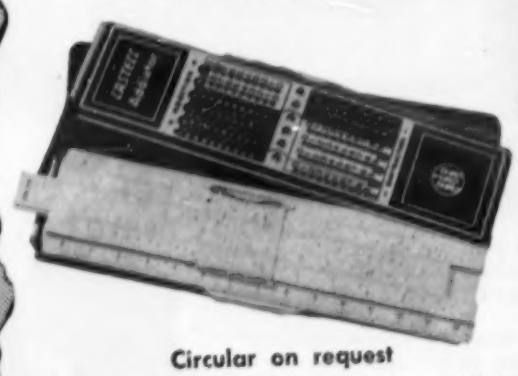
Read what Industrial Equipment News says about the new

A.W. FABER-CASTELL ADDIATOR SLIDE RULE

—then send **$20** for each . . . 10% discount for 6 or more.

CALCULATING . . . Slide Rule to multiply, divide, add and subtract

Source: A. W. FABER-CASTELL PENCIL CO.
39-43 Dickerson St., Newark 4, N. J.

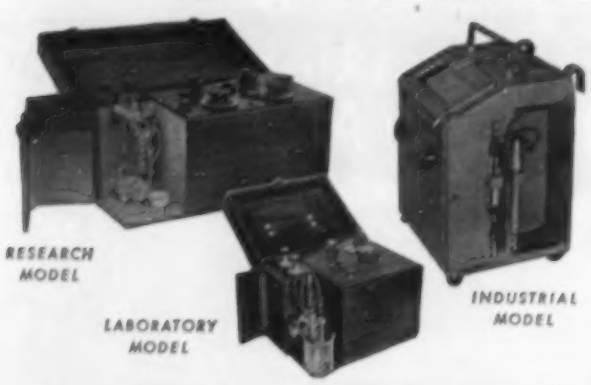


Circular on request

The front face of this new Castell Addiator plastic rule carries the essential scales of a regular slide rule for problems involving multiplication and division. On the rear face are tabulated figures and a counter for operation by a stylus to add, subtract and to set up numbers to be remembered in a calculation. Two lengths are 5 and 10 inches. Three styles include Darmstadt and Rietz scales and the Addiator.

Send Purchase Order to:
A.W. FABER-CASTELL PENCIL CO., INC.
39-43 Dickerson Street, Newark 3, N. J.

If you write maker identify as IEN - 1372



Cambridge pH Meters

The three portable models illustrated above incorporate new and important advantages. A.C. line operation eliminates battery nuisance. Laboratory and Research models use electron-ray tube for precise null-point indication. Industrial model is direct-reading, continuous-indicating; ruggedly built for plant use.

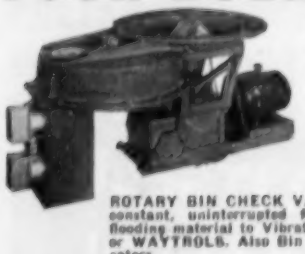
Accuracy: Research .02 pH, Laboratory .05 pH, Industrial .10 pH. Cambridge pH equipment also includes single- and multi-point indicators and recorders. Send for Bulletin 910-MR.

CAMBRIDGE INSTRUMENT COMPANY, INC.
3710 GRAND CENTRAL TERMINAL, NEW YORK 17, N. Y.

Pioneer Manufacturers of
PRECISION INSTRUMENTS

If you write maker identify as IEN - 1373

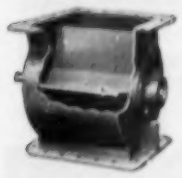
3 UNITS TO IMPROVE YOUR BULK HANDLING



Illustrations show 3 items from Jeffrey's broad line of bulk handling equipment. Jeffrey makes complete systems or individual units, all designed to give you greater production at less cost.

ROTARY BIN CHECK VALVE for a constant, uninterrupted flow of fine flooding material to Vibrating Feeders or WAYTROLS. Also Bin Level Indicators.

LOW-HEAD BARREL PACKERS for reducing size of containers, increasing capacity and cutting shipping costs. Also supplied with deck to provide conveying action in packing.



Rotary-Type FEEDER for finely pulverized material. Also other types of feeders.

Other Jeffrey Bulk Handling Equipment includes:

- Constant Weight Feeders
- Batch Weighing Systems
- Batch Proportioning Systems
- Electric Vibrating Feeders
- Vibrating, Mixing Conveyors
- Mechanical Vibrating Conveyors
- Coolers and Dryers
- Car Pullers
- Power Scoops

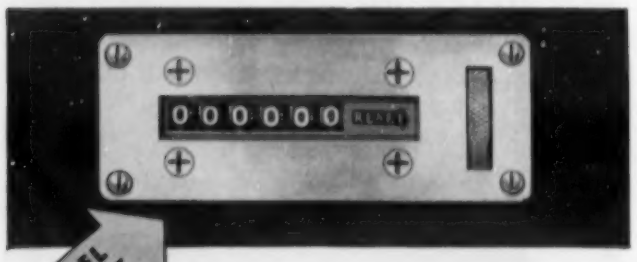
Write for information on your specific requirement.

THE JEFFREY MANUFACTURING CO.
Columbus 16, Ohio

IF IT'S MINED, PROCESSED OR MOVED ...IT'S A JOB FOR JEFFREY!

sales offices and distributors in principal cities

If you write maker identify as IEN - 1374



MODEL "Y" ELECTRIC PRODUCTIMETER

on the MACHINE or at CONTROL CENTER

The flexibility of the Model "Y" Electric Productimeter offers versatility of application to suit individual needs. Panel mounts grouped at control center give immediate production figures of many machines in different plant departments. Operates accurately over wide current fluctuations. Totally enclosed.

Hi-Speed, Compact, Accurate, Durable. Adaptable to panel or base mounting.

Send for Catalog No. 55

DURANT MANUFACTURING CO.
1930 N. Buffum St. Milwaukee 1, Wis.
130 S. Water St. Providence 3, R. I.
Representatives in Principal Cities

PRODUCTIMETERS *Count Everything* 75th ANNIVERSARY

If you write maker identify as IEN - 1375

TESTING . . Electrical apparatus for quantitative chemical analysis

Source: FISHER SCIENTIFIC CO.
719 Forbes St., Pittsburgh 19, Pa.

Operator dials potential

Electronic control has been added to the company's Electro Analyzer, previously described IEN-9751-52. The control is assembled in a cabinet that mounts on the analyzer housing. It makes constant readjustments of cathode or anode potential required for precise quantitative analysis of several metals from the same solution. It senses changes in potential between cathode or anode and the solution to increase or decrease the applied potential and maintain a required electrode-to-solution potential.

The apparatus itself plates upon an electrode and then weighs it to find the amount that has been plated. The two-station assembly provides for simultaneous determinations of duplicate or different samples. Each station has its own stirring motor and "on-off" switch, its own presetting dial and combination of beaker support and thermostatically controlled heater. List price is $1,400.

If you write maker identify as IEN - 1376

WEIGHING . . Crane scale reads to 5 ton in 25 lb. increments

Source: JOHN CHATILLON & SONS
93 Cliff St., Dept. IEN, New York 38, N. Y.

For rough service

Four springs, made of alloy steel, act as the force measuring element and also absorb shock in this new Model 16-10000DH crane scale. A recoil mechanism, built around an independent rack, prevents damage caused by sudden shock. A 10 per cent tare adjustment is included in the assembly.

Readings are made on the 15-in. circular aluminum dial. It is recessed and covered by transparent plastic. The bottom load hook is mounted on a ball bearing swivel. The housing is made of steel equipped with a top lifting ring. Overall length is 36½ inches. Extension, for a capacity load, is 1.208 inches. List price is $848.

If you write maker identify as IEN - 1377

Silent operation is assured for a 5,000-kw. gas turbine by the muffler built for it by Burgess-Manning Co., Dept. IEN, Libertyville, Ill. The muffler measures 74 ft. in length by 12 ft. in diameter and weighs 70,000 pounds. It was shipped to the job in three sections.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 1378

Lasting Efficiency at Lower Cost

These GGU Pumps are in service in every industry which employs liquids in processing. Discharge may be in any of eight positions. Small amount required of special metals for handling corrosives.

APCO Turbine-Type PUMPS —ideal for "1001" duties where small capacities and high heads predominate. Get acquainted.

WE ARE EXCLUSIVE BUILDERS OF FINE PUMPS
Our entire personnel and facilities are devoted to pump design and manufacture. PUMPS by Aurora recognize no superior.

We Invite Your Special Pump Problems

Write for CONDENSED CATALOG "M"

DISTRIBUTORS IN PRINCIPAL CITIES

AURORA always PUMPS — **AURORA PUMP COMPANY**
DIVISION OF THE NEW YORK AIR BRAKE COMPANY
52 LOUCKS STREET • AURORA, ILLINOIS

If you write maker identify as IEN - 1379

Here's BIG HELP IN TERMINAL WIRING!

The correct wire to correct terminal every time!

The New **JONES FANNING STRIP**

Connections are made through Fanning Strip, on bench or anywhere apart from barrier strip, and quickly slipped into assembly.

Designed for use with Jones Barrier Terminal Strips Nos. 141 and 142, for 1 to 20 terminals.

9-141 Barrier Strip

Simplifies and facilitates soldering. Insures positive correct connections. Saves time. Ideal for harness or cable assembly. Strong construction: Brass terminals, cadmium plated. Heavy bakelite mounting.

9-161 Fanning Strip. Pat. applied for

Send for complete data on this new basic improvement.

Jones — **HOWARD B. JONES DIVISION**
CINCH MANUFACTURING CORPORATION
CHICAGO 24, ILLINOIS
SUBSIDIARY OF UNITED-CARR FASTENER CORP.

If you write maker identify as IEN - 1380

QUALITY WOOD SCREWS *Shipped from Stock!*

Bulk stock—**500,000,000 screws**
Packaged Stock — **300,000 gross**

Phillips or Slotted — Flat. Round. Oval — Steel, silicon bronze, brass and aluminum — and all popular plated finishes. 543,200,000 wood screws in widest range of sizes and finishes, all made to Federal Specifications FF-S-IIIa. This tremendous stock . . . packages, alone, filling nearly two miles of 24-inch shelves . . . backs

FOR CATALOGUE WRITE Box 68-E

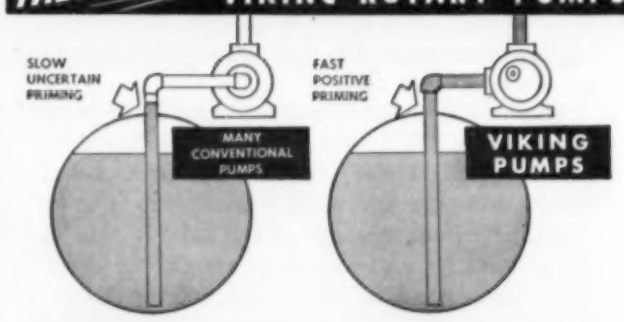
SERVICE BY SOUTHERN

- prompt shipment
- secure packing
- wood screws in bulk lubricated free upon request

Southern SCREW COMPANY
STATESVILLE • NORTH CAROLINA

If you write maker identify as IEN - 1381

FAST STARTS WITH VIKING ROTARY PUMPS



Its the fast start and smooth, even flow that gets your pumping job done quicker and at less cost.

No slow, uncertain priming with Viking positive suction pumps. They prime themselves and go to work at once.

They also save on wear of valves and meters. No sudden jar and spasmodic delivery.

VIKING — AN HONORED NAME IN PUMPING

Investigate the smooth, even flow of Vikings today. To start, ask for bulletin 54SF.

See Our Catalog in SWEETS

VIKING PUMP COMPANY
CEDAR FALLS, IOWA

If you write maker identify as IEN - 1382

STREAMLINED AND RUGGED

BRAND NEW

Cast Iron Housing

Black Wrinkle Finish

Sponge Rubber Skid Pad

LINEMASTER

CLIPPER FOOT SWITCH

The streamlined Clipper Switch matches your unit's most modern features! Complete with all the rugged features of a heavy industrial switch. It is easily operated from sitting or standing position giving the worker a free hand for greater efficiency. Nearly 100% dustproof and yet accessible to wiring — just two screws to remove to reach interior mechanism.

Size: 4½" x 3½" x 1½" • Weight: 2 lbs.

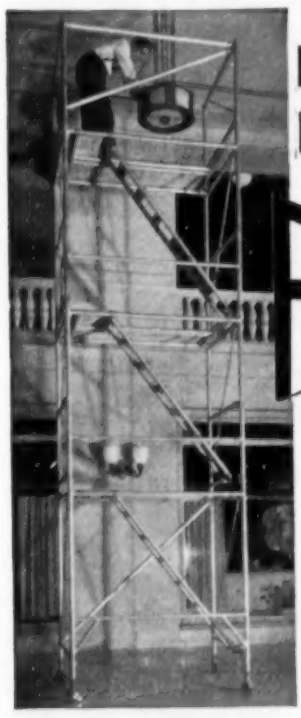
WRITE FOR BULLETIN AND PRICES

Let us quote on your switch requirements

LINEMASTER SWITCH CORP.

424 Woodstock Terrace • Woodstock, Conn.

If you write maker identify as IEN - 1383



No Acrobatics! No Flip-Flops!

with the

FOLD-A-WAY

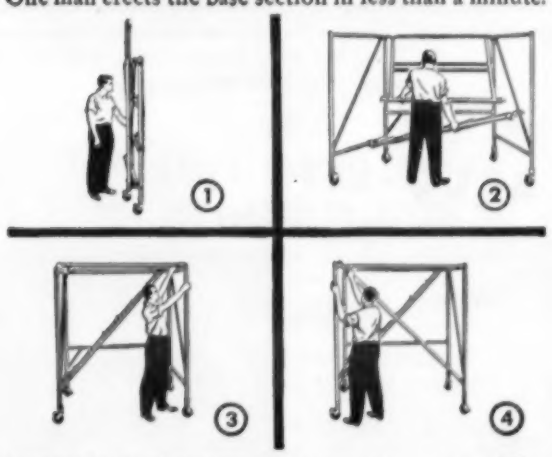
TRADE MARK

SCAFFOLD

ALUMINUM

Underwriters' Laboratories approved

HERE'S WHY: For erection, the end frames of this new aluminum scaffold swing open sideways, as shown below. Maximum swing of any component is 90 degrees, so the erector is always *within* the base area. One man erects the base section in less than a minute.



ANNOUNCING—DESIGNED TO MAINTAIN our high safety standards, this new, improved screw leg is now available. By simply turning the threaded collar you get adjustments, up to 24", for the height desired. Yet the legs and casters will not fall out of the scaffold. The adjusting collar device, mounted on the scaffold leg, gives maximum speed in adjusting, with minimum effort.

Aluminum Sectional Ladder Scaffolds

are extremely mobile. 24" width permits use in restricted areas. 6', 8' and 10' spans; ladders 4'3", 5'8" and 6'1" high, slip together easily for desired height. Underwriters' Laboratories approved. Write for Bulletin AS-2.

For Greater Safety...Efficiency...Economy

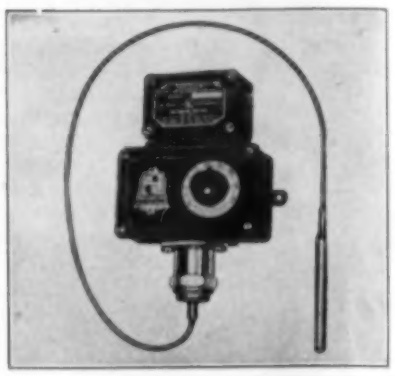
THE PATENT SCAFFOLDING CO. INC.

38-21 12th Street Dept. IEN Long Island City 1, N. Y.
6931 Stanford Ave., Los Angeles 1, Calif.
Branches In All Principal Cities

If you write maker identify as IEN - 1385

CONTROL . . Explosion proof unit regulates flow for heating or cooling

Source: PARTLOW CORPORATION
2 Campion Road, Dept. IEN, New Hartford, N. Y.



Aluminum housing

Model PS is a new non-indicating explosion proof temperature control to regulate the flow of steam, oil, gas, electricity or a coolant in hazardous locations. Overall dimensions are 6½ by 3¼ by 6½ inches. Weight is 4½ pounds. The assembly has been approved by Underwriters' Laboratories, Inc., for application in Class-1 Group-C to Class-2 Group-G atmospheres. External appearance is illustrated.

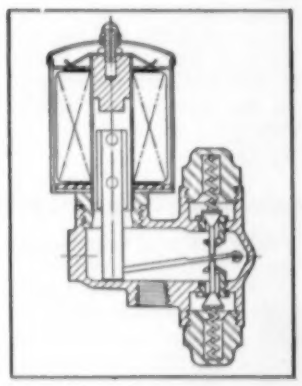
Two designs include a calibrated temperature scale, with which the control point is set directly on the instrument dial, and an uncalibrated assembly in which the dial is marked with divisions from 0 to 50 as a function of the temperature. The control circuit switch rates 4 amp. on 110-volt ac. A relay can be employed to increase this overall rating.

The instrument is actuated by a heat sensitive bulb, located at the point of control, to convert temperature changes into pressure changes that actuate the control mechanism. Any of 10 elements can be employed for an overall temperature range between minus 30 and plus 1,200 deg. F.

If you write maker identify as IEN - 1386

VALVE . . Solenoid operated, 3 way for corrosive gas, liquid, steam

Source: AUTOMATIC SWITCH CO.
391 Lakeside Ave., Dept. IEN, Orange, N. J.



Bulletin 8300

Cast steel with stainless steel trim, or stainless steel throughout, can be specified for this new special Type 8300 solenoid valve. The solenoid is equipped with a continuous duty coil. It is available with glass and silicone insulation for temperatures to 450 deg. F. The design eliminates need for packing in the valve body. Beveled regrinding seats and discs can be removed without taking the valve from the pipe line.

The valve handles gases and liquids ordinarily corrosive to bronze, brass or cast iron, in pilot control of diaphragms and to apply and exhaust pressure from single or double-acting cylinders. Flow can be diverted from one line to another in process installations.

Flow is through one port when the solenoid circuit is closed. It is through the other port when the circuit is opened. Valve sizes range from ⅛ to ⅜ inch. Maximum pressure is 1,000 lb. for the smallest unit and 75 lb. for the largest. List price, with cast steel body, is $83. It is $118 for the stainless steel body.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 1387

Stop LEAKS

Mix a stiff putty of Smooth-On No. 1, the iron cement. Apply it to the pipe where it enters the fitting. Take a cheap metal strap, butt it against the fitting and tighten up, compressing the Smooth-On. That's all. Smooth-On sets quickly and iron-hard, expanding against the strap and into the leak. This unique expanding action makes a tight, lasting repair, proof against steam and heat under pressure or vacuum.

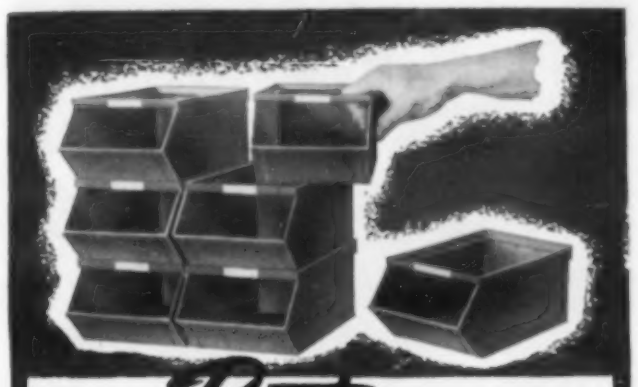
FREE REPAIR HANDBOOK

48 pages, many illustrations, simple directions for ingenious time and money saving repairs. Write today for your copy. Millions have been printed and distributed during our 57 years. • Get Smooth-On from your dealer.

SMOOTH-ON MFG. CO., DEPT. I
570 COMMUNIPAW AVE., JERSEY CITY 4, N. J., U. S. A.

SMOOTH-ON

If you write maker identify as IEN - 1388



Parts...

★ Where You Want Them . . .

★ When You Want Them

You'll save time, space and labor handling parts and material when you use these patented STACKBINS. STACKBINS keep parts instantly accessible—eliminate waste hand motions—stack compactly to form units of exactly the right shape and capacity—make order filling or assembly work faster, easier, more efficient. Heavy steel, all-welded construction. Sizes from 3½" x 6" x 3¼" to 15" x 24" x 11".

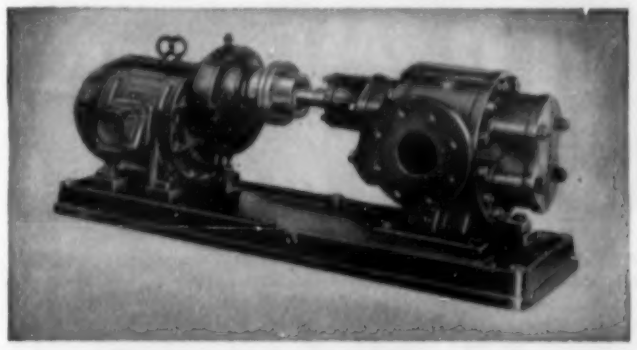
Manufactured and sold in Canada exclusively by Wickware-Stackbin, Ltd., Ottawa

Write Stackbin Corp., 1077 Main Street, Pawtucket, R. I.

STACKBIN SYSTEM

"Stacked and Still Accessible"

If you write maker identify as IEN - 1389



Don't let high viscosity gum up the works

If you're having trouble choosing a rotary pump for your equipment, the Worthington unit shown here is the answer to your problems.

It's the Worthington rotary pump with special herringbone gears that handle viscous and other troublesome liquids at capacities up to 5000 gallons per minute against pressures up to 500 psi. The herringbone gear design eliminates end thrust, trapping, and produces smooth, pulsation-free flow. In addition, Worthington builds a complete line of vane-type pumps.

Get all the facts on these trouble-saving pumps. Write to Worthington Corporation, Pump and Compressor Merchandising Division, Section PC.3.16, Harrison, N. J. PC. 3.16

WORTHINGTON

If you write maker identify as IEN - 1390

FRASSE FACTS —on Cold Finished Steels

FREE from Frasse—these two pocket size booklets are packed with easy-to-find, easy-to-read information about cold finished steels.

..... Gives general description of Bessemer Steels, with mechanical properties of principal types, tables for machining speeds and feeds, sizes and tolerances of standard shapes.

..... Defines *shafting*, gives tolerances and characteristics of various finishes, including Turned and Polished, Cold Drawn, Centerless Ground, and Turned, Ground and Polished.

Frasse also offers—well balanced stocks of cold finished steels, practical engineering assistance in their application and speedy delivery. Let this combination work for you by making Frasse your source for cold finished bars. For your free booklets—and complete, quick bar service—write or call Frasse.

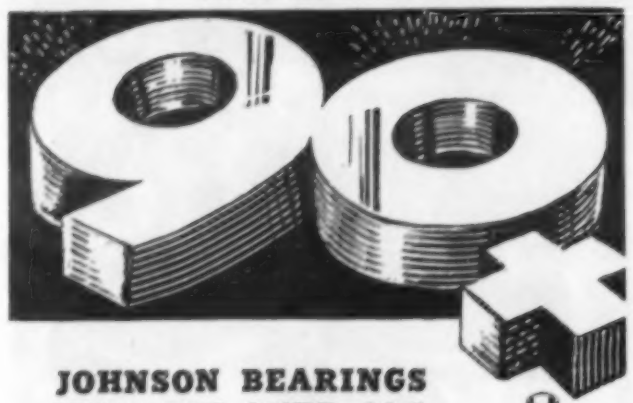
Call FRASSE 1st for COLD FINISHED STEELS

Peter A. FRASSE and Co., Inc.

17 Grand Street, New York 13, N.Y.

Philadelphia • Buffalo • Syracuse • Hartford

If you write maker identify as IEN-1391



JOHNSON BEARINGS WILL FIT OVER 90% OF YOUR NEEDS

WHEN YOU require a sleeve bearing . . . first investigate the line of standard, stock size Johnson Bearings. Your local Johnson Distributor can furnish more than 90% of your requirements right from stock . . . General Purpose (GP) Cast Bronze, Self-Lubricating Ledaloyl, Graphited Bronze and Electric Motor Bearings . . . each in a large range of sizes. Many other uses may be filled by Universal Bronze Bars and Babbitt Metal. Write for the Johnson Bearing Catalog.

GEN. PURPOSE

ELEC. MOTOR

LEDALOYL

GRAPHITED

BRONZE BARS

JOHNSON BRONZE CO., 476 S. Mill St., New Castle, Pa.

JOHNSON BEARINGS *Sleeve-Type*

If you write maker identify as IEN-1392

YES GAST customers HELP US . . . TO HELP YOU!

THEY DO IT WITH PERSONAL RECOMMENDATIONS! Recently we surveyed our new accounts (whose engineers specified Gast Air Motors, Compressors and Vacuum Pumps as components for *their* products).
Of these new accounts, we found that one-half were sent to us by other satisfied Gast customers! Also, a sampling from hundreds of accounts indicates an average O.E.M. customer has bought from Gast for 16⅓ years!

HOW DOES THIS HELP YOU? You can "specify Gast" with confidence—because you have *proof that Gast service and products satisfy users year-after-year—and earn their voluntary recommendations!*

IT PROVES EVEN MORE! Indirectly, it *proves the high quality of Gast products*—for only controlled high quality continues to please!

GAST HELPS DIRECTLY TOO—When you encounter problems on the application, installation or performance of Gast Products, our experienced engineers are ready to cooperate fully. Wherever Gast Air Motors, Compressors or Vacuum Pumps can do a job for you, we'll help make sure they do the *best possible job!*

Write GAST describing your specific application. Request Catalog and "Ideas" booklet.

Original Equipment Manufacturers for Over 25 Years

GAST ROTARY — AIR MOTORS · COMPRESSORS · VACUUM PUMPS (TO THREE H.P.) (TO 30 LBS.) (TO 28 INCHES)
GAST MANUFACTURING CORP., 119 Hinkley St., Benton Harbor, Mich.

If you write maker identify as IEN-1393

KEYWAYS?

CUT 'EM EASY—by hand, arbor press
CUT 'EM QUICK — one minute per keyway
CUT 'EM CHEAP — as little as a penny apiece

(25 standard Kits; 23 standard sizes of broaches; 71 standard size bushings; and a wide variety of production type, guideless broaches)

with du MONT *Minute Man*
KEYWAY BROACH KITS

CUT AND MAIL THIS COUPON TO

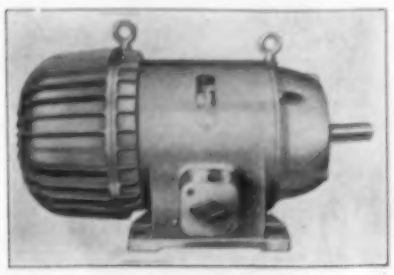
The du MONT CORPORATION, Greenfield, Mass.
MAIL ME FREE CATALOG and PRICE LIST N

Name .....
Company .....
Address .....

If you write maker identify as IEN-1394

MOTOR . . Fan cooled induction unit, drip proof design, rates 15 to 30 hp.

Source: REULAND ELECTRIC CO.
Westminster & W. Mission, Dept. IEN, Alhambra, Cal.



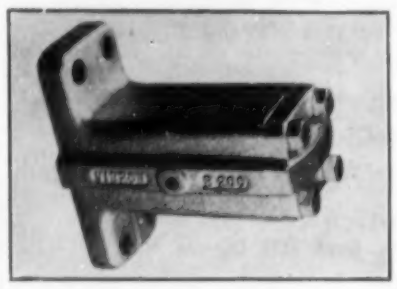
Features small frame

Finned endbell encloses a 13-in. cooling fan at one end of this new 30-hp. induction motor. Air is sucked in through a screen filter opening and is blown over the internal areas of the motor. The arrangement permits assembly in a No. 326 frame as compared with the previously required No. 365. The motor is available in ratings from 15 to 30 hp. Standard construction is drip proof. The assembly can be furnished with a single-end shaft or special hydraulic pump mount endbells.

If you write maker identify as IEN-1395

VIBRATING . . Pneumatic unit promotes flow in bins, hoppers, chutes

Source: BURGESS-STERBENTZ CORP.
3790 W. 150th St., Dept. IEN, Cleveland 11, Ohio

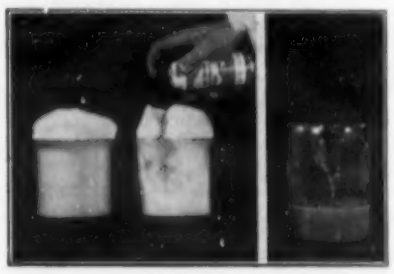


Does not pound

Cushioned action, to prevent metal to metal impact, characterizes the new Vibron line of pneumatic vibrators and results in quiet operation. Vibration is set up by reaction to a reciprocating piston operating at speeds as high as 5,000 strokes per minute. The piston rides in a chromium plated cylinder. The line includes integral end mounting plates as shown in the illustration. Special mounting assemblies can be specified.

If you write maker identify as IEN-1396

New dispersion of silicone compound in Freon is packaged in a pressurized container to kill foam formations in laboratories, pilot plants, and other small scale processing operations. Anti-foam A is the trade name. Effective concentrations of the silicone range from 0.01 to one part per million so no trace can be detected in a finished batch after it has been defoamed. The packaged material is available from Dow-Corning Corp., Box 592, Dept. IEN, Midland, Mich., at $2.50 per 6-oz. can.



All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN-1397

LEVIN MICRO-DRILL PRESS
FOR VERY SMALL HOLES DOWN TO .002"

Designed to hold small drills in precision collets, thus overcoming the difficulty of making a drill run true as when held in a conventional drill chuck. Absence of a sliding quill guarantees maximum sensitivity with fingertip control. A mounted ⅛" capacity chuck can also be used.

Send for Catalog L describing Micro-Drill Press, full range of collet sizes, accessories and other precision tools

LOUIS LEVIN & SON, INC., 782 E. PICO BLVD., LOS ANGELES 21, CALIF.

If you write maker identify as IEN-1398

GARLOCK
PIPE THREAD COMPOUND
For Permanently Tight Joints

Garlock Pipe Thread Compound is a superior material for a permanently tight joint. Does not harden or shrink; does not drip; does not spoil or deteriorate. Keeps joint from "freezing" and protects against rust and corrosion. Easy to apply. Use Type A against steam, water, air, gas, heavy oils or alcohol; use Type B against light oils or solvents. Available in 1-lb., 2-lb., 4-lb. cans and in larger containers. Order from your nearest Garlock office or write for Folder AD135 today.

Branch offices in most principal cities.

THE GARLOCK PACKING CO.
PALMYRA, NEW YORK
In Canada: The Garlock Packing Company of Canada Ltd., Toronto, Ont.

GARLOCK

If you write maker identify as IEN-1399

If you write maker identify as IEN-1400

Why
ALCO-LITE Type 400 is the right ladder for you

The Design is Right

Ample standing room on the 14" by 17" platform. Compact, folding design makes it easy to handle and store. Available in even heights from 4' to 12'.

The Strength is Right

Constructed from strong 61ST Aluminum Alloy, heavily riveted throughout. Supports heavy loads for years without deteriorating.

The Weight is Right

Weighs less than 5 lb. per ft. (12-ft. ladder weighs 56 lbs.). Quickly and easily moved about without worker strain.

The ALCO-LITE Type 400 is the *right* folding platform ladder for you if you want safety, convenience, and durability.

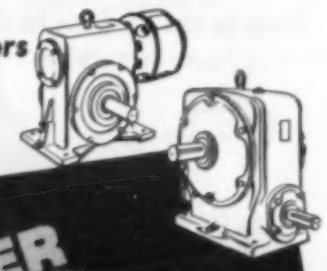
Write for complete information on ALCO-LITE aluminum industrial ladders.

Pioneer Builders of Aluminum Industrial Ladders

ALCO-LITE ALUMINUM LADDERS
ALUMINUM LADDER COMPANY
100 CARBIS STREET • WORTHINGTON, PENNA.

If you write maker identify as IEN-1401

How cost-wise buyers rate SPEED REDUCERS



GOOD BETTER ✓BOSTON Gear

REDUCTORS AND RATIOMOTORS

IN STOCK AT 92 BOSTON GEAR DISTRIBUTORS at Factory Prices

Look under "Gears" in the Yellow Classified Section of your Telephone Directory for the one nearest you.

Get the 384-page BOSTON Gear Catalog . . . industry's most valued "textbook" of drive design and maintenance. Ask your BOSTON Gear Distributor, or write Boston Gear Works, 63 Hayward St., Quincy 71, Mass.

If you write maker identify as IEN-1402

CAPCO DOCK COVERS OFFER YEAR 'ROUND PROTECTION

Can be installed inside or outside of dock door . . . models for various purposes.

SOLD AT A LOW COST

...and the cost is especially low because it pays for itself many times...saves time and money over many years.

- PREVENTS ACCIDENTS
- ONE MAN CAN OPERATE
- FIREPROOF
- WATERPROOF
- DURABLE—LONG LIFE
- DEPENDABLE

BEAT THE BAD WEATHER

CAPCO Dock Covers completely enclose the space between car and building doorways, protecting loading and unloading during bad weather. Recommended by safety engineers. No more wet merchandise in the rain . . . no more interruption during winter. Here's your insurance against loss of either heat or refrigeration; you have practically the same as indoor loading.

CAPCO

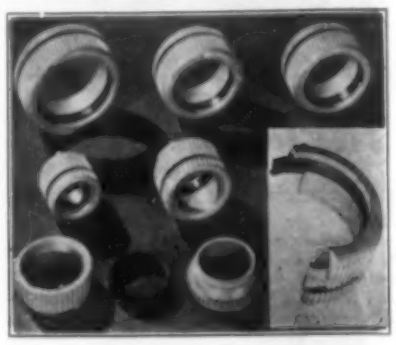
Distributors in principal cities

622-24 PROSPECT AVENUE • KANSAS CITY 1, MISSOURI

If you write maker identify as IEN-1404

PIPE FITTING . . Molded clamp to assemble flexible plastic pipe

Source: CARLON PRODUCTS CORP.
10225 Meech Ave., Dept. IEN, Cleveland 5, Ohio



Compresses the pipe

Two sections thread together, in this new molded plastic clamp, to compress a synthetic gasket in a V-shaped groove. The action presses the gasket radially inward to compress the end of a flexible plastic pipe on an insert fitting the same as the couplings, tees, ells and adapters, previously described IEN-8387-52. The clamp makes a permanent leak-proof connection with the serrations on the fitting. It is tightened or removed by application of a strap wrench. Seven sizes range from ½ to 6-in. pipe.

If you write maker identify as IEN-1405

STEEL . . For high speed tools contains alloyed sulphide lubricant

Source: LATROBE STEEL CO.
Dept. IEN, Latrobe, Pa.

Trade named
Desegatized

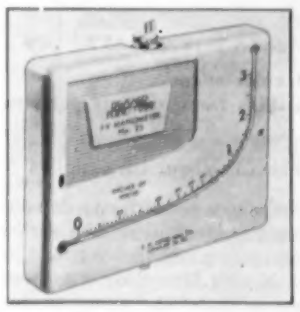
Sulphide lubricant, uniformly distributed in the steel structure, is now available in the company's line of XL high speed steel. The addition has no effect on the physical properties of the steel. It imparts beneficial effects in prevention of build-up on the cutting edges, production of smooth surface finish on the work. It minimizes friction between the tool and the work.

Three types, M-1, M-2 and M-10 are available in bars, drill rod, tool bits, forgings, roll turning tools. The company has prepared a four-page bulletin, "XL Desegatized High Speed Tool Steel."

If you write maker identify as IEN-1406

GAGE . . Curved tube manometer reads pressure, draft, air velocity

Source: F. W. DWYER MFG. CO.
317 S. Western Ave., Dept. IEN, Chicago 12, Ill.



Includes fittings

New Flex-Tube I-V Gage employs oil as the fluid element and is equipped with a plunger type oil level adjuster. Two ranges are 0 to 3 in. and 0 to 7 in. of water with low range accuracy within 0.01 in. of water. A direct reading velocity assembly is included in the line for use with a Pitot tube to read in ranges to 7,000 and to 10,500 fpm. Assembly is in a molded plastic housing.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN-1407

NEW! LOW PRICE MOBILE TANK SPRAYER

No. 450 Complete Outfit
$169.00
With rubber tired wheels and rubber pads, internal mix spray gun, tire chuck and air hose.

Automatic pressure switch starts motor when pressure in tank drops to 30 lbs.—shuts off at 45 lbs. Twin compressor mounted on heavily welded 11½ gal. tank delivers 4 cu. ft. of clean, oil-free air per minute. Equipped with ½ h.p. A.C. motor, factory lubricated. Dozens of handy maintenance and production uses. Ask your mill supply house or write direct for catalog.

Write today for catalog
Compressors High & Low Pressure
Paint Sprayers
Spray Guns

W. R. BROWN CORP.
2671 N. NORMANDY AVE., CHICAGO 35, ILL.

SPECIALISTS IN PORTABLE SPRAYERS FOR OVER 20 YEARS

If you write maker identify as IEN-1408

HYDRAULIC DESIGN MADE EASY!

BULLETIN 110 ILLUSTRATES 11 STANDARD HYDRAULIC CYLINDERS
Complete Dimensions Operating data

This Hannifin catalog gives complete engineering and design data on 11 Hydraulic cylinder mounting types, 1" to 8" bore, with or without cushions—styled to meet every requirement. Interchangeability of collars and caps makes possible unlimited combinations. Send for your copy of this valuable reference.

WRITE FOR BULLETIN 110.

HANNIFIN

Hannifin Corporation, 1107 S. Kilbourn Ave., Chicago 24, Ill.

If you write maker identify as IEN-1409

FOR MATERIAL HANDLING—

more and more—the swing is to wide-base pneumatic tires

GENERAL

INDUSTRIAL PNEUMATIC TIRES

More Designers are specifying wide-base General Pneumatics. They know Generals add these extra selling points to handling equipment.

SAVE TIME • MONEY • LABOR

- MORE LOAD CAPACITY AT LOW OR HIGH SPEEDS
- CUSHION EQUIPMENT AND LOADS REDUCING BREAKAGE AND SPILLAGE
- SAVE HIGH COST FLOORS AND FLOOR SURFACES
- SLOW, EVEN WEAR FOR LONG SERVICE
- HIGH FLOTATION FOR EASIER ROLLING OVER SOFT GROUND
- ROLLS EASIER, SMOOTHER OVER ALL SURFACES

Available separately or in assemblies of Tires, Tubes and Wheels. Size O.D. 8" to 27"—200 to 4000 lbs. cap. for low or high speeds.

THE GENERAL TIRE

Rigid CASTER FORKS *Swivel*

Wide-base caster forks engineered to carry heavier loads without adding dead weight to equipment. Available in identical pairs in a wide range of sizes.

SEND FOR CATALOG . . . DEPT. 6

THE GENERAL TIRE & RUBBER CO. AKRON, O.

If you write maker identify as **IEN - 1411**

BECKER CO_2 POWERED SPRAY GUN . . .

NO COMPRESSOR • NO HOSES NO ELECTRICAL OUTLETS NEEDED

USE IT ANYWHERE!

Only $19.95 with 10 cartridges

It's such a handy, *portable* production tool that literally hundreds of industrial spraying jobs are possible with the new Becker "Model 50" Spray Gun. It's the most versatile unit yet devised for spraying paints, oils, solvents, protective coatings, etc. Powerful CO_2 cartridge sprays up to one 21-ounce containerful; or tank can be charged from air hose (for liquids atomizing at 120 psi) with special attachment. Nozzle adjusts from spray to stream . . . removes without pressure loss. Ruggedly built with precision-machined brass and stainless inserts; heavy gauge steel container and cast aluminum head.

SEE YOUR DISTRIBUTOR or order direct, postpaid. Extra CO_2 cartridges at your dealer's, or 10 for $1, postpaid . . . also cartridges in case lots. Write for further details.

SULLIVAN-BECKER CO., Dept. 194-B, Kenosha, Wis.

If you write maker identify as **IEN - 1412**

No more drudgery for me in cleaning grease-caked floors

Flip of switch re-sharpens brushes automatically!

His boss is happy too . . .

and should be. A Finnell 84XR Dry-Scrubber does the job in about one-tenth the time required to hand-scrape the floors, and spares maintenance men the back-breaking effort of manual methods. Two powerful scarifying brushes quickly loosen coatings of dirt, oil, grease, and shavings. Interchangeable rings and brushes adapt the machine to wet-scrubbing, polishing, and steel-wooling. (The Vac illustrated, *Finnell's 10B* for wet and dry pick-up, features a By-Pass Motor.)

Brushes adjust to floor irregularities

For demonstration, consultation, or literature, phone or write nearest *Finnell Branch* or Finnell System, Inc., 2602 East St., Elkhart, Ind.

FINNELL SYSTEM, INC. *Originators of Power Scrubbing and Polishing Machines* — BRANCHES IN ALL PRINCIPAL CITIES

If you write maker identify as **IEN - 1413**

Before you buy unit heaters... steam, hot water or gas...

SEE MODINE FIRST!

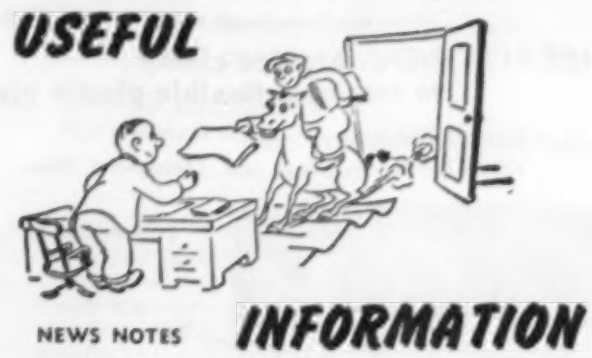
"Modine Steam and Hot Water Units assure perfect heating comfort at low overall cost."

"Modine Gas-Fired Units are only half the weight, half the size of the average of 7 other leading makes."

You're ahead two ways when you buy Modine. First, Modine builds both steam and gase-fired unit heaters, thus offers you an unbiased recommendation. Even more important, whichever Modine Unit Heater fits your needs, you can be sure of unequalled performance. Ask for Bulletin 153 on steam and hot water and Bulletin 653 on gas units. Modine Mfg. Co., 1503 DeKoven Ave., Racine, Wis.

U-1219

Modine **UNIT HEATERS**



NEWS NOTES **INFORMATION**

If you write maker identify as **IEN - 1414**

BATTERIES . . Service manual of 44 pages on lead-acid battery care, maintenance, servicing

Association of American Battery Mfrs.
2706 First National Tower, Dept. IEN, Akron, Ohio

Revised Third Edition is announced for the Association's Battery Service Manual, first issued in 1943. The booklet starts with a description of battery construction, how the battery works, ABC's of specific gravity, capacity, effect of temperature, new battery installation, factors affecting life, testing, charging, repair procedures, generator circuits.

If you write maker identify as **IEN - 1415**

BEARINGS . . Information bulletin on design, selection and application of needle bearings

Torrington Co.
3701 W. Sample St., Dept. IEN, South Bend 21, Ind.

Catalog 61 contains 32 pages of data on needle bearings by the company's Bantam Bearing Division. Life factors, hardness factors, speed factors, capacities vs. speed, standard units and dimensions, shaft fits, housing fits, and a set of application drawings are given. Letterhead request, please.

If you write maker identify as **IEN - 1416**

BELTS . . Instruction book of 36 pages shows how to splice a rubber transmission belt

B. F. Goodrich Company
450 S. Main St., Dept. IEN, Akron 11, Ohio

Stepping down belt ends, cementing and applying tie-gum, placing fill-in material and vulcanizing are detailed by pictures and text in new instruction book, "Plylock Belt Joint." It will be sent upon letterhead request. Making a splice on a belt in place, how to figure endless belt length, time required to vulcanize, are among the specific instructions.

If you write maker identify as **IEN - 1417**

CASTINGS . . Three-dimensional color slides show making of precision castings from mercury patterns

Alloy Precision Castings Co.
E. 45th & Hamilton, Dept. IEN, Cleveland 14, Ohio

Mercast process using frozen mercury patterns is demonstrated by new series of 3-D Kodachrome slides. The series of 45 slides shows steps in making complex-shape castings in one piece of such metals as nickel, Monel, Hastelloy, stainless steel, Stellite. The company offers to show the slides to designers, engineers, planning or production executives.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as **IEN - 1418**

A PAID NEWS ADVERTISEMENT BY WEST DISINFECTING CO.

WASHROOM towel dispenser reduces towel costs up to 40%

Westroll Towels in Micromatic Towel Dispensers reduce towel waste to an absolute minimum. Their design takes human nature into account. People will take just enough toweling and no more when they have to crank it out by hand. Tests show Westroll users average only 17 inches of paper, against 22, 33 or even 44 inches of interfold or flat towels. Users can crank out exactly the amount of towel necessary; as little as two inches for the removal of women's lipstick, for example.

There are also savings in maintenance. One filling of the Westroll Cabinet is equivalent to four fillings of ordinary flat towel dispensers. Here's an immediate saving in costly janitors' time. The Westroll dispenser has relatively few working parts; its maintenance is negligible. Westroll dispensers are loaned and maintained by West. They are easy to keep clean and help keep washrooms spic and span and free from excess litter.

Westroll paper towels, made especially for these cabinets, are made of uniform high quality. Tested and retested during manufacture, they are exceptionally strong and absorbent. Packed 16 rolls to the case, each case contains sufficient toweling for approximately 10,000 single sheet dryings.

Write for folder and more information. West Disinfecting Company, Dept. 13, 42-16 West St., Long Island City 1, N. Y.

If you write maker identify as **IEN - 1419**

Easy to use . . . Easy to clean . . . Easy to service

DERBY SEALER — **MODEL 32 GUMMED TAPE DISPENSER**

For Shipping Room and Production Line Packaging

• Rugged simplicity aptly describes the Model 32. Derby's exclusive, one-piece solid casting eliminates parts and provides added rigidity. What's more, the Model 32 is easy to clean, even during the hot summer months when machines tend to "gum-up."

• The Derby Model 32 accommodates any tape from 1" to 3" wide. Delivers from 4 inches to 34 inches of tape at one stroke.

• Derby's exclusive "moisture-control" system maintains a maximum high water level in the tank to assure a constant supply of water to the brush, no matter how fast tape is dispensed.

• Also available is the Model 32-T with tool steel shear-type blades for cutting reinforced strapping tapes. Blades have two cutting edges to double their useful life before resharpening.

For further information, write Dept. IF

DERBY SEALERS, INC.
Derby, Connecticut

If you write maker identify as **IEN - 1420**

YOU SAVE $$$ WITH

EMBOSSED LABELS

NO DIE CHARGE

FOR PRODUCT IDENTIFICATION

ANY SIZE LABEL
ANY SIZE LETTERS
ANY METAL — INCLUDING STAINLESS STEEL

Raised-letter nameplates to your specifications. Less expensive than comparable etched labels.

Tack-weld, rivet or screw them to your product. Paint or galvanize over them. Wording will remain sharp and clear. Also etched and lithographed labels.

Send Sample or Sketch for Price Quotation

DEPT. B

TECH PRODUCTS, INC.
442 Mosel Avenue Staten Island 4, N. Y.

If you write maker identify as **IEN - 1421**

ALLEN 1-TON POWER BENCH TYPE PUNCH PRESS

A Rugged, Reliable Press For Small Work

Price $125 f.o.b. Clinton, Mo. (less motor)

Cuts Costs and Saves Money On Stamping, Forming, Drawing, etc.

Sturdy, single pin, non-repeat hand lever clutch. V-belt drive. Weight 105 lbs.

30-DAY MONEY-BACK GUARANTEE

Full year warranty against defects. Send your order today. Prices includes motor bracket, V-belt, motor pulley.

Overall height—17½"
Base size—8½" x 8½"
Die bed—5½" x 8½"
Ram face—1½" x 3½"
Ram stroke—¾"
Positive ¾" ram adjustment

Free Circular

ALVA F. ALLEN DEPT. IE CLINTON, MO.

If you write maker identify as **IEN - 1422**

Latest data from Western Precipitation on Cottrell Recovery Equipment!

Do you have operations in your plant where gas-laden suspensions, wet or dry, are a problem? Such suspensions may be falling on surrounding property, causing nuisance difficulties. Or perhaps important values are being lost that can be profitably recovered.

Whatever the nature of *your* recovery requirements, you will find this 40 page Cottrell booklet of great help. It contains up-to-date data on the latest advancements in Cottrell recovery methods — prepared by the organization that pioneered commercial application of Cottrell Electrical Precipitators almost a half century ago and has consistently led in new Cottrell developments.

40 PAGES of helpful information

on Recovering Dusts, Fly Ash, Mists, Fumes and other Suspensions from Stack Gases

This booklet summarizes such important data as . . .

- Basic types of Cottrell equipment.
- Various types of Collecting Electrodes.
- Various Shell Constructions.
- Data on CMP Units.

. . . and many other helpful facts.

This data-packed booklet is free. Ask for Bulletin C103R.

WESTERN Precipitation CORPORATION

DESIGNERS AND MANUFACTURERS OF EQUIPMENT FOR COLLECTION OF SUSPENDED MATERIALS FROM GASES & LIQUIDS

Main Offices: 1011 WEST NINTH STREET, LOS ANGELES 15, CALIFORNIA
CHRYSLER BLDG., NEW YORK 17 • 1 N. La SALLE ST. BLDG., CHICAGO 2
1429 PEACHTREE ST. N.E., ATLANTA 5 • HOBART BLDG., SAN FRANCISCO 4
PRECIPITATION CO. OF CANADA, LTD., DOMINION SQ. BLDG., MONTREAL

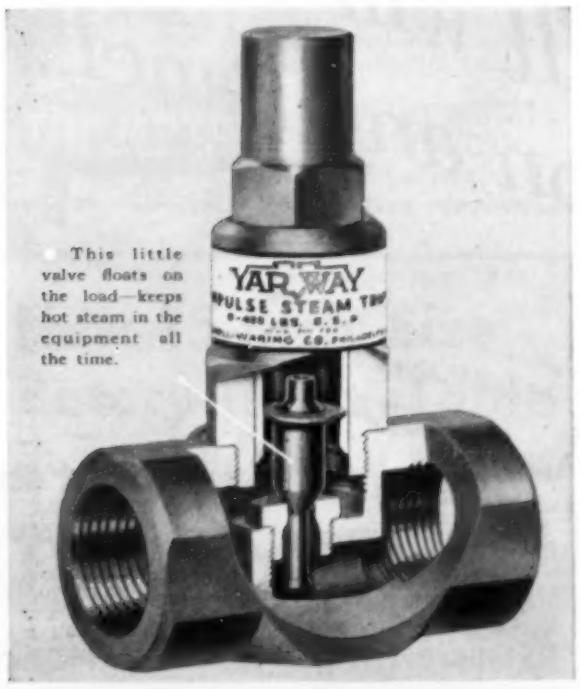
If you write maker identify as **IEN - 1423**

THIS LITTLE VALVE CAN SAVE YOU MONEY

Your steam-heated equipment can turn out more production because of this little stainless steel valve.

It is the only moving part in a Yarway Impulse Steam Trap, and *it floats on the condensate load*. When steam is turned on, the little valve opens wide . . . discharges condensate and air *continuously* and brings the equipment *to production temperature in the shortest possible time*. After that, it passes, with a pulsating action, all condensate as it forms—*keeps a maximum, steady temperature in the equipment*.

Result to you—more production per day.



This little valve floats on the load—keeps hot steam in the equipment all the time.

Other Yarway Impulse Steam Trap advantages—small size, low initial cost, easy installation, low maintenance, stainless steel construction, and quick availability from over 200 local industrial distributors.

Over 900,000 Yarways have been sold to nearly all industries. Write for free Yarway Trap Book T-1740.

YARNALL-WARING COMPANY
122 Mermaid Ave., Philadelphia 18, Pa.

YARWAY | *impulse steam trap*

USEFUL INFORMATION
(Continued)

If you write maker identify as **IEN - 1425**

CLUTCHES . . Eight-step procedure to adjust friction clutch is given in wall chart

Lipe-Rollway Corporation
712 Emerson Ave., Dept. IEN, Syracuse 1, N. Y.

Two by three feet is the size of new wall chart, "Adjustment Procedure—Shim Type Clutch," which the company will send on request. Pictures and instructions give an eight-step procedure on how to adjust the company's friction clutch. Along with this is a tabulation of data on 166 models.

If you write maker identify as **IEN - 1426**

EQUIVALENTS . . Pocket card gives decimal equivalents to six places

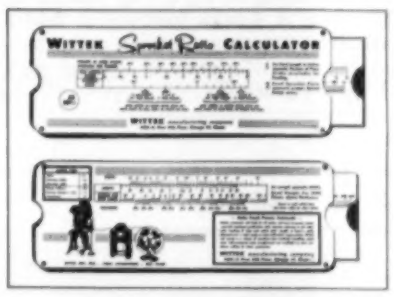
South Bend Lathe Works
301 E. Madison St., Dept. IEN, South Bend 2, Ind.

Offered free on request is new decimal equivalent card measuring 3⅜ by 5½ inches. It gives decimal equivalents of fractional parts of an inch to six places, is printed in red and black to assist in reading.

If you write maker identify as **IEN - 1427**

FEEDING . . Cardboard slide calculator for weight of metal part and press feed sprocket ratio

Wittek Mfg. Co.
4305-15 W. 24th Place, Dept. IEN, Chicago 23, Ill.

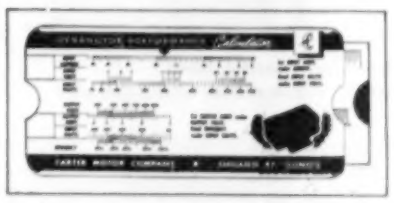


Front of new 8½ by 3-in. calculator reads correct sprocket ratio to be used on the chain drive for the company's automatic punch-press roll feed. On the back is a set of scales and slide to determine weight per 1,000 pieces for metal parts from ⅛ to 10 in. in width and length by .003 to .125 in. in thickness. The new Sprocket Ratio Calculator will be sent on request.

If you write maker identify as **IEN - 1428**

GENERATORS . . Cardboard slide calculator reads performance figures on dynamotor power units

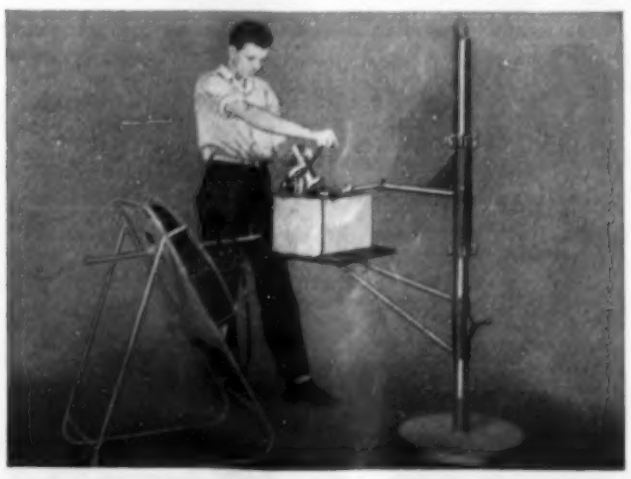
Carter Motor Co.
2644 N. Maplewood Ave., Dept. 10, Chicago 47, Ill.



Five sets of information are furnished by new 6 by 3-in. Dynamotor Performance Calculator, available at a list price of 25 cents. It reads input watts against input volts and amperes. It reads efficiency against input watts for variable output volts and amperes. It gives no-load output voltages against full-load voltages and per cent regulation. It also has two conversion scales, one for Fahrenheit to centigrade temperature degrees, and another for pressure-altitude readings.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as **IEN - 1429**



STRAP-O-MATIC cuts packaging time

● The Brainard Strap-O-Matic tensions, cuts, and seals steel strapping in a few seconds. Ideal for assembly-line packaging. Shown above are 12-pound Strap-O-Matic tool, tool mount and coil holder. Brainard's complete line of steel strapping, tools and accessories covers all packaging, carloading, palletizing, bundling, export crating and warehousing requirements. Write for fully illustrated catalog.

Brainard — STEEL DIVISION, SHARON STEEL CORPORATION

FOR CATALOG, WRITE
BRAINARD STEEL DIVISION
Griswold Street, Dept. II-2
Warren, Ohio

If you write maker identify as **IEN - 1430**

New MERCURY "TUG" ELECTRIC TRACTOR

Model 550

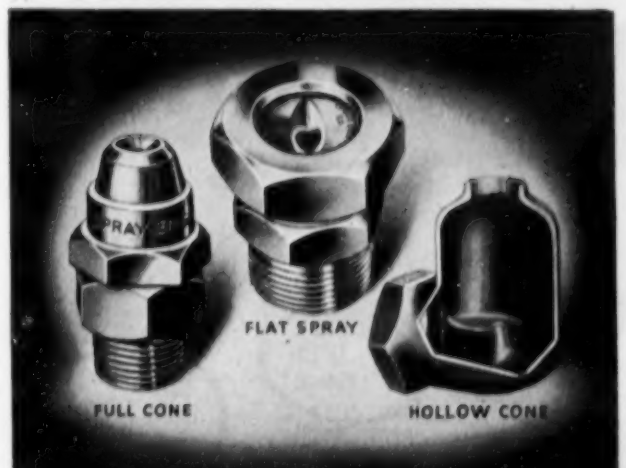
The compact, versatile, new MERCURY "Tug" electric tractor. Features *automotive type steering* ...4-speed magnetic contactor control with timed acceleration and controlled plugging . . . new type double reduction drive with demountable wheel rim and tire assemblies . . . self-energizing hydraulic brakes and new type semi-elliptic spring suspension. Available in twin-3 wheel, or 4 wheel model with wide front tread.

MERCURY — FORK TRUCKS · TRACTORS · TRAILERS

For complete information write:

MERCURY MANUFACTURING COMPANY
4132 S. Halsted St., Chicago

If you write maker identify as **IEN - 1431**



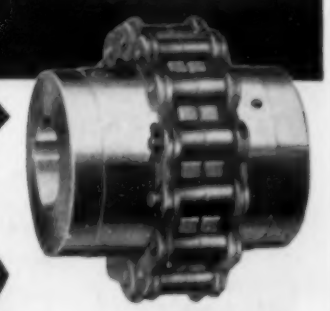
SPRACO NOZZLES

Write for NOZZLE CATALOG *to*
SPRAY ENGINEERING CO.
110 CENTRAL STREET • SOMERVILLE 45, MASS.

If you write maker identify as **IEN - 1432**

Only LINK-BELT "RC" Flexible Couplings give all 3 advantages at low cost

1. Equalized load
2. Proper balance at high speeds
3. Effective compensation for end float and misalignment



Link-Belt's exclusive design makes the difference. The simplicity of single-width chain is combined with divided rollers to give you top performance—plus economy. Specify Link-Belt Roller Chain Couplings for any rating from fractional to 1000 hp. Get all the facts from your Link-Belt representative or distributor, or write for Folder 2363. 15,270

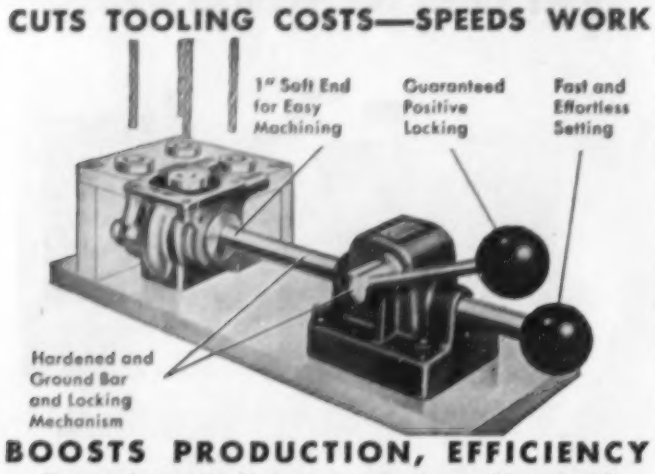
LINK-BELT
"RC" Flexible Couplings

LINK-BELT COMPANY: Plants: Chicago, Indianapolis, Philadelphia, Colmar, Pa., Atlanta, Houston, Minneapolis, San Francisco, Los Angeles, Seattle, Toronto, Springs (S. Africa), Sydney (Australia). Sales Offices, Factory Branch Stores, Distributors in Principal Cities.

If you write maker identify as IEN - 1433

HEINRICH "GRIP-MASTER" FIXTURE LOCK

CUTS TOOLING COSTS—SPEEDS WORK



BOOSTS PRODUCTION, EFFICIENCY

Now—at the request of industry—we offer the new "Grip-Master" Screwless Fixture Lock, applicable for fixtures and jigs used in drilling, milling operations, etc. It incorporates the same high-quality locking mechanism proved by industrial use in the famous "Grip-Master" Screwless Drill Press Vise. Pays for itself quickly by increasing production, cutting tooling costs, etc. See your Dealer, or write for details.

heinrich TOOLS INC.

NEW CATALOG FREE

Be sure you have a complete Heinrich Tool Catalog in your files. Your copy will be sent free upon request.

DEPT. 174-B • RACINE, WIS.

DRILL PRESS VISES • FIXTURE LOCKS • NIBBLERS PUNCHES • ROD CUTTERS

If you write maker identify as IEN - 1434

INDUSTRIAL AND INSTITUTIONAL

SECTIONAL TABLES

with SWING SEATS

MAXIMUM SEATING CAPACITY IN LIMITED SPACE!

Colorful tops and wide range of enamel paint finishes add attractive new color to industrial and institutional dining rooms and recreation rooms. Units seat 4 to 24 people. Attached seats (with or without backs) swing under table to eliminate crowding, noise and confusion of loose chairs and tables. Ideal for industry, schools, hospitals and institutions.

WRITE TODAY For NEW Catalog!

DISTRIBUTORS IN ALL PRINCIPAL CITIES

The Chicago Hardware Foundry Co.

"Dependable Since 1897"

3424 Commonwealth Ave.
North Chicago, Ill.

If you write maker identify as IEN - 1435

Protect Your Plant With DUNKING STATIONS

The safe solution to your plant smoking problem! Sipco Dunking Stations prevent fires. Cigarettes, cigars, matches, etc. immediately extinguished—no smoldering—no fire hazard! Built specifically for hard industrial use—and abuse.

Unit No. 1—Heavy cast aluminum canister, attractive metal sign, upright and heavy weighted base for use on floors, aisles, etc.

Unit No. 2—Same as Unit No. 1 except without upright and base. Easily mounted on walls, columns and posts.

Unit No. 3—Canister alone, with mounting bracket.

Write now for Illustrated folder which gives complete details.

STANDARD INDUSTRIAL PRODUCTS CO.

Dept. N. 116 South Garfield Ave., Peoria, Ill.

USEFUL INFORMATION

(*Continued*)

If you write maker identify as IEN - 1436

LIGHTING . . Cardboard slide demonstrator shows number of burnouts expected for group of 100 lamps

General Electric Co.
1 Nela Park, Dept. IEN, Cleveland 12, Ohio

New visual demonstrator has been developed by the company's Lamp Division to show reasons for planned group replacement of electric lamps. The unit shown is an audience model, used by the company. A smaller cardboard model is similar in appearance. It will be sent on request.

The cardboard model consists of a perforated paper envelope with 100 holes. It accommodates a cardboard slide, measures about 8½ by 11 in. overall. The holes represent 100 lamps in an installation. The slide has four scales. Moving the slide in or out of the envelope makes black spots appear at the holes to represent burnouts at various stages of average lamp life.

You can choose a scale on the slide for spot relamping in new installation or normal operation, or for group relamping at 10 and 20 per cent burnouts. A 4-page instruction folder accompanying the demonstrator presents facts on lamp performance, points out that the cost of changing a lamp may be more than the cost of the lamp itself.

If you write maker identify as IEN - 1437

MANAGEMENT . . Suggestions on planning a plant modernization or expansion program

Walter Kidde Constructors Inc.
140 Cedar St., Dept. IEN, New York 6, N. Y.

Outline procedure is given step by step to organize a plant-expansion planning program in new 16-page booklet, "Basic Planning—Plant Modernization and Expansion." It deals with four principal steps of determination of production quotas, analysis of products and product components, analysis of production facilities, preparation of optimum layout. It concludes with an offer of assistance by the company's Industrial Engineering Department.

If you write maker identify as IEN - 1438

MANAGEMENT . . Textbook on specifications describes their industrial applications with examples

John Wiley & Sons Inc
440 Fourth Ave., New York 16, N. Y.

"Industrial Specifications" titles new 170-page textbook, written by E. H. MacNiece, Director of Quality Control at Johnson & Johnson. List price is $4.50. The book describes need for better specifications, variability and tolerance, standards and simplification, specifications for raw materials, process, product, government applications.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 1439

Driving Made Safer...

WITH THE HELP OF

"FOLDED-and-FORMED" Heating Elements

Windshields in the new cars made by one of the "big three" are larger and *more curved* for increased visibility, with the curving accomplished in equipment electrically heated by Trent Patented "Folded-and-Formed" Elements.

This is but one of hundreds of different applications for these amazingly efficient, economical heating elements ...with the 5-year guarantee.

What is YOUR Heating Problem?

Write for "Folded - and - Formed" literature, or consult our Engineering Department.

STANDARD RACKS—in 12" x 12" sections, arranged vertically or horizontally, singly or in multiples, to provide any desired K. W. at temperatures to 1350° F. Also, CUSTOMBILT RACKS—in variety of sizes.

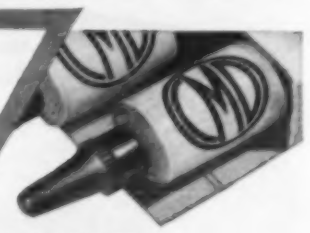
TRENT INC.

Electrically Heated Industrial Equipment

247 LEVERINGTON AVE. PHILA 27, PA.

If you write maker identify as IEN - 1440

read what users say about CMD anti-scoring lubricant



Among technical men all over the country, CMD has become the standard for extreme pressure, anti-scoring lubrication. These men have found that they can get more efficient lubrication for a longer time... ...and get longer life out of their equipment too. People who have used and tested CMD are your best proof of its reliability.

"We have been using your Anti-Scoring Center Point Lubricant on all ejector, return and guide pins: and we highly recommend this lubricant to anyone having trouble with scored and broken pins of this type on die cast dies."
Die Manufacturer

"We have tried out your CMD Anti-Scoring lubricants in both grease and oil in comparison with another brand claiming to be the world's best, for the purpose. We are happy to report that we have found your product superior in remaining in its protective position under sustained heavy loads for the longest periods of time of any material we have tried for this purpose."
Engineering Consultant

"Some time ago you very kindly sent to us some samples of your CMD Center Point Lubricants. These have been carefully tested in a number of applications besides the lubricating of centers, and we are pleased to say that the results have been very satisfactory even in cases where other well known high pressure lubricants have failed in a very short time."
University Dept. of Physics

Sample Kit Available for Your Trial

CHICAGO MANUFACTURING & DISTRIBUTING CO.

1904 West 46th Street, Chicago 9, Illinois

If you write maker identify as IEN - 1441

Added Evidence that

Everyone Can Count on

VEEDER-ROOT

REPORTER AT LARGE . . . that's what you might call this new Veeder-Root Reset Magnetic Counter . . . adaptable to remote counting from machines or processes to central boards or instrument-clusters, wherever you want to put them. NOW . . . what can your imagination do with these few facts? For the *full facts*, write:

VEEDER-ROOT INCORPORATED

HARTFORD 2, CONN.

If you write maker identify as IEN - 1443

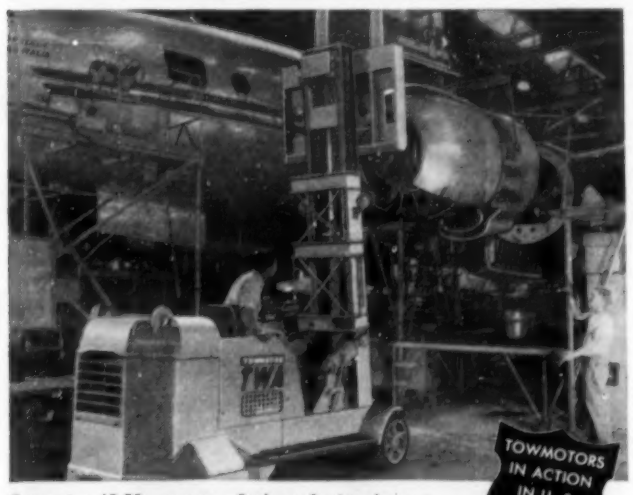
STURTEVANT DUSTLESS BLENDERS

Thoroughly Blend Substances into an Inseparable Mass

The 4-Way Mixing Action of the Sturtevant Dustless Blenders thoroughly mixes two or more substances into an inseparable whole . . . every part of which is the same analysis. Single receiving and discharging opening insures tight sealing during mixing process. "Open-door" accessibility permits thorough cleaning. The fast, accurate mixing operation increases output . . . cuts mixing costs. Mixing capacities from ¼ ton to 75 tons per hour. Write.

STURTEVANT MILL COMPANY
113 CLAYTON STREET • BOSTON 22, MASS.

If you write maker identify as IEN - 1444



Towmotor LT-90, removes Cyclone Engine from TWA Constellation, at Fairfax Airport, Kansas City.

IT'S PLANE EASY. Just as a TOWMOTOR simplifies and speeds handling this 5,600 pound engine, TOWMOTOR can save considerable time and labor in your plant. *TowmoTorque,* the drive especially designed for TOWMOTOR Lift Trucks, saves clutch and shifting time, brings new economies to stop-and-go driving—and, with *Power Steering,* boosts operator efficiency. TOWMOTOR attachments handle "plane or fancy" loads with ease. The savings will make a big hit with your boss. Ask for free booklet, "What Makes It Tick?" TOWMOTOR CORPORATION, Div. 2602, 1226 East 152nd Street, Cleveland 10, Ohio.

TOWMOTOR THE ONE-MAN-GANG

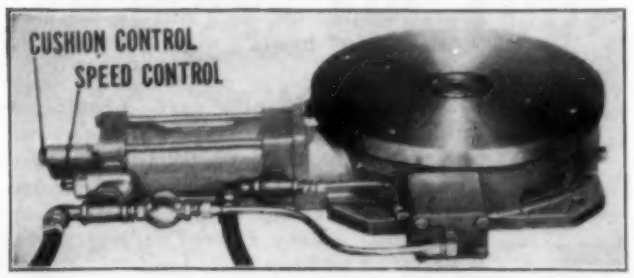
FORK LIFT TRUCKS and TRACTORS
Since 1919

TOWMOTOR ENGINEERED FOR QUALITY PERFORMANCE

If you write maker identify as IEN - 1445

New 15-inch Size Rotary Index Table

Air operated, 4 to 30 positions



MODEL 1405

New larger size of our Index Table has a 15-inch top and is rotated by a 3½-inch air cylinder operating on 60 to 175-lb. pressure. It operates positively. Controls are adjustable for speed and for cushioned stop. In a test with a 200-lb. load 22 in. in diameter using an 8-station ring, indexes were made at a rate of 100 per minute.

Standard table is supplied with a 4, 6, 8 or 12-station ring. Other rings to 30 indexes will be supplied to order. Speed is variable from 6 to 100 indexes per minute. Mounting can be horizontal or vertical.

Designed for use on punch presses, air or hydraulic presses, drilling machines, to handle parts or fixtures for drilling, tapping, staking, trimming, riveting. A Micro switch prevents rotation when locked.

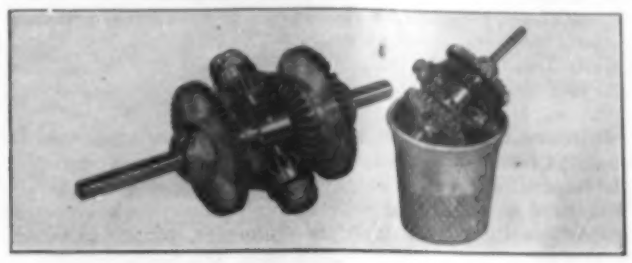
1954 Catalog on request

AIR-HYDRAULICS INC.
809-13 Belden Avenue • Jackson, Mich.

If you write maker identify as IEN - 1446

DRIVE . . Miniature differential, 12 to 150 oz. in. maximum torque

Source: BELOCK INSTRUMENT CORP.
111-01 14th Ave., Dept. IEN, College Point 56, N. Y.



Bulletin, "Precision Differentials"

Illustrated are two of the four new assemblies in the company's line of miniature precision differentials, two of which are fitted with plain bearings and two with pre-loaded ball bearings. Smallest unit in the line employs a 1/16-in. shaft and measures 1⅛ in. in overall length. The largest carries ¼-in. shaft and measures 3¾ in. in length.

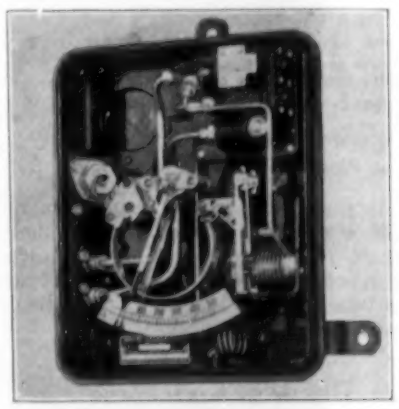
The end gears are integral with the bevel gears in the smallest unit, shown to the right in the illustration. The gears are bronze. The end gears are available in 64 or 96 pitch and in any pitch diameter that can be cut from a ½-in. maximum outside diameter to a ¼-in. minimum root diameter. Maximum recommended speed is 600 rpm.

The largest assembly has separate input spur gears made of aluminum unless otherwise specified. The spider and shafts are stainless steel. Minimum root diameter is 1⅛ inches. Maximum recommended speed is 1,800 rpm.

If you write maker identify as IEN - 1447

CONTROL . . Pneumatic transmitter for remote process pressure control

Source: BAILEY METER CO.
1050 Ivanhoe Road, Dept. IEN, Cleveland 10, Ohio



Bulletin P41-4

Mini-Line is a new transmitter that indicates pressure in a process line and transmits pneumatically to indicating, recording or controlling equipment at remote stations. It can be employed to measure and control pressure of steam, liquids, gases in pipes and pressure vessels in a minimum range of 0 to 30 lb. and a maximum range of 0 to 3,000 pounds.

The instrument measures and transmits a pneumatic signal in any specified one of three ranges, 3 to 27, 3 to 15, or 5 to 25 pounds. The signal pressure is directly proportional to the measured pressure. Transmitting distances can be to 1,000 ft. for indicators and recorders, to 400 ft. for controllers. In both cases a ¼-in. tube is employed. The instrument can be tied into any standard metering or control installation. The measured variable and the pneumatic signal are both indicated on a common scale in the transmitter.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 1448

TO CLEAN YOUR DIE MOLDS..

Moisture, oil and foreign matter completely removed from air lines by patented one-piece separator and eliminator chamber.

Does not waste air by continuous venting. Positive, automatic, effective for paint sprays, sand blasting, etc.

R & I E EQUIPMENT DIVISION
I-T-E CIRCUIT BREAKER CO.
GREENSBURG, PENNSYLVANIA

If you write maker identify as IEN - 1449

FOR TOP RESULTS IN CYANIDE COPPER PLATING USE

UDYLITE

FORGED-COPPER BALL ANODES

You'll copper-plate a finer finish faster with Udylite Forged-Copper Ball Anodes. That's because they combine all the advantages of the economical ball shape, PLUS fine, uniform grain structure. 99% pure copper, made from virgin metals, Forged-Copper Ball Anodes by Udylite give you these benefits:

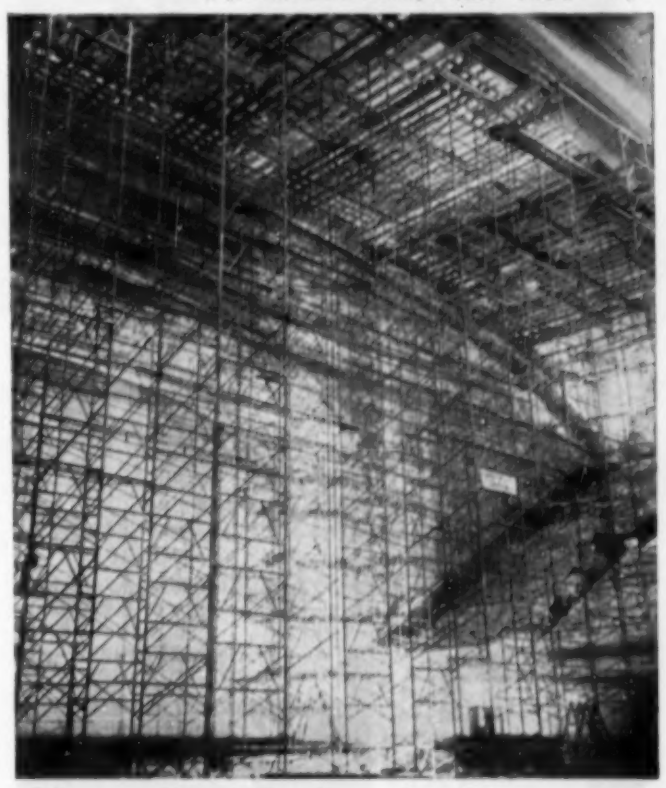
1. A smoother plating finish through elimination of oxide inclusions and anode sludging.
2. Fewer rejects, greater operating economy because they corrode more smoothly and uniformly.
3. Provide easier buffing of copper finish through extra-smooth deposit.
4. Make ideal fine-grained undercoat for nickel and chrome.
5. Assure denser deposits so essential in the copper plating used for selective carburizing.

You'll find, too, that Forged-Copper Balls produce consistently excellent results with Bright Cyanide Copper where smoothness of deposit is of utmost importance.

For full information, or to order your supply, call your Udylite technical man today, or write direct to THE UDYLITE CORPORATION, *Detroit 11, Michigan.*

THE UDYLITE CORPORATION
DETROIT 11, MICHIGAN
PIONEER OF A BETTER WAY IN PLATING

If you write maker identify as IEN - 1450

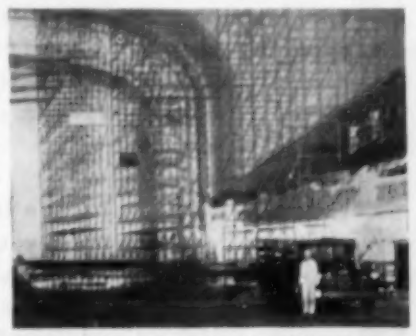


First Bath in 31 Years!

SAFWAY ROLLING TOWER SPEEDS $93,000 CLEANING JOB ON CLEVELAND PUBLIC HALL

PROBABLY THE LARGEST *rolling* scaffold ever assembled (it weighed over 39 tons) was used by the Garbo Decorating Co. in washing the interior of Cleveland's giant Public Hall.

A full 42 ft. deep, this Safway Scaffold spanned the entire width of the auditorium—207 ft. at its widest point—and reached to the 72½ ft. high ceiling. When work was completed on one 42-ft. strip, the *complete scaffold* was advanced another 42 ft. with the aid of two trucks and 10 men. Each moving operation took just 45 minutes.



SAFWAY FITS EVERY JOB

Standard Safway parts can quickly be made up into scaffolds to fit any job—large or small—high or low—regular or irregular. Put your men in the best working position fast and safely.

Learn how elevated maintenance can be completed better—faster—cheaper with Safway built-up towers. Write for this new bulletin.

RENTED and SOLD by distributors everywhere

SAFWAY STEEL PRODUCTS INCORPORATED
6228 West State St.
MILWAUKEE 13, WIS.
Manufacturers of Tubular Steel Scaffolding and Equipment

If you write maker identify as **IEN - 1452**

NICHOLSON MAKES

FREEZE-PROOF

Steam Traps

for Every Plant Use

Because they drain completely when cold, these four types of Nicholson steam traps are positively freeze-proof. Can be freely installed outdoors. Universally recommended for use in lines which need not be in continuous use during cold weather, because they are freeze-proof and because their 2 to 6 times average drainage capacity results in minimum heat-up time. The non-air binding feature of Nicholson traps also notably facilitates heat transfer in severe weather. Size ¼" to 2"; pressure to 250 lbs.

BULLETIN 853
159 Oregon St., Wilkes-Barre, Pa.

W. H. NICHOLSON & CO.
TRAPS · VALVES · FLOATS

If you write maker identify as **IEN - 1453**

WIGGINS INST-O-MATIC COUPLINGS

QUICK-DISCONNECT 3000 psi

for Low or High Pressure HYDRAULIC FUEL and PNEUMATIC systems

SIZES: ¼" TO 2½"

write for further information

Wiggins
E. B. WIGGINS OIL TOOL COMPANY, INC.
3424 East Olympic Boulevard
Los Angeles 23, California

If you write maker identify as **IEN - 1454**

Alloy Fabrication is our Baby!

YOU NAME IT . . . Any processing equipment—autoclaves, agitators, condensers, baskets, evaporators, kettles or stills. Small experimental models or full-scale production equipment. Any size or shape—metal or alloy including stainless steel, monel, Hastelloy, etc.

WE'LL MAKE IT! We'll follow your specifications . . . or help you develop them. Entirely new, unconventional equipment no problem. Tell us your requirements. We'll submit careful estimates without obligation. Write or wire for complete information to:

Emerson-Scheuring

TANK & MANUFACTURING CO., INC.
2073 Martindale Avenue • Indianapolis 7, Indiana

USEFUL INFORMATION

(Continued)

If you write maker identify as **IEN - 1455**

GRINDING . . Production examples and figures in 32-page booklet on application of cylindrical grinding

Landis Tool Co.
26 E. Sixth St., Waynesboro, Pa.

Informative set-up sketches are given in new Case Studies Booklet CGI-53 on a variety of cylindrical grinding operations. The sketch accompanies a picture of the operation and information on operation, material, tolerance, stock removal, production. Single and multiple diameters, plunge grinding, crankshaft grinding are examples.

If you write maker identify as **IEN - 1456**

HEATING . . Booklet of application ideas on electrical heating of liquids, air, gas, machines

Edwin L. Wiegand Company
7505 Thomas Blvd., Dept. IEN, Pittsburgh 8, Pa.

"101 Ways to Apply Electric Heat" uses captioned pictures to suggest applications for metal-sheathed elements. These applications are grouped in the 32-page pocket booklet under such uses as heating water, oil, generating steam, melting snow, melting viscous products, welding preheating.

If you write maker identify as **IEN - 1457**

ISOLATING . . Pocket booklet of answers to nine commonly-asked questions on machine mounting

Felters Co.
210 South St., Dept. IEN, Boston 11, Mass.

"What is Unisorb?" is the first question answered by new pocket-size booklet, "Questions on Unisorb." Other questions are answered to describe the vibration-isolating machine-mounting pad, its properties and uses under machines ranging from small units to 450-ton stamping presses.

If you write maker identify as **IEN - 1458**

PAINTING . . Sound color movie shows use of hot lacquer in industrial finishing

Hercules Powder Co.
1940 Delaware Trust Bldg., Dept. IEN, Wilmington, Del.

"Flight to Lacquer" is new 20-min. color sound film on how hot-spray lacquer is being used to finish such products as machine tools, aircraft, buses, tanks, trucks, furniture. The example of the machine-tool maker shows how finishing operations were reduced from 13 to 6 stages by this method. The company will furnish details on request.

If you write maker identify as **IEN - 1459**

PIPE FITTINGS . . Fabrication ideas on aluminum pipe based on new forged alloy flanges

Tube Turns Inc.
224 E. Broadway, Dept. IEN, Louisville 1, Ky.

Advantages of aluminum pipe in process service, standard sizes of welding fittings, and presentation of a new line of forged alloy flanges are covered in new 8-page folder, "Aluminum Welding Fittings." You may be interested in pictures that show fabrication possibilities for pipe and fittings.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as **IEN - 1460**

GET THIS NEW DRUM PUMP Idea Book!

New ideas in fluids handling

May we show you what this amazing little Fast-Flo Drum Pump has done in industry after industry?

An air-operated reciprocating pump, the 13½ lb. Fast-Flo operates on air as low as 35 PSI. It screws directly into 2" drum bung openings, or can be clamped on tank sides. *And Fast-Flo does not pressurize drums!*

Fast-Flo can transfer, agitate, dispense . . . and be used as a supply pump for applying, mixing or spraying. It handles an almost unbelievable range of materials, many as thin as isopropyl alcohol, many as thick as cookie frostings.

SEND FOR *FREE* COPY

GRACO Fast-Flo UNIVERSAL DRUM PUMP

One of the applications in this new Fast-Flo book may suggest a better way to handle one of your operations, saving time, labor and money. Write today!

GRAY COMPANY, INC.
101 GRACO SQUARE • MINNEAPOLIS 13, MINNESOTA
Regional Offices: New York, Philadelphia, Detroit, Chicago, Atlanta, San Francisco

If you write maker identify as **IEN - 1461**

REEVES Automatic Controls! ...including Auto-Pneumatic with linear output speeds!

● ***For automatically controlling liquid levels in tanks, maintaining constant temperatures, pressure, and other variables, and monitoring flow systems of liquids, gases or chemicals.***

REEVES new Auto-Pneumatic control with linear output speeds is but one of a complete line of controls designed and engineered to operate your machines more efficiently, more profitably, *automatically.* Send today for your copy of REEVES new Automatic Production Control Booklet. Specify IN2-G.

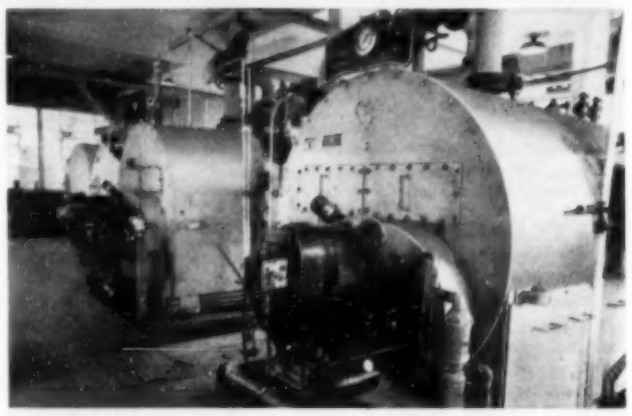
FREE!
Reeves New Automatic Production Control Booklet

REEVES PULLEY COMPANY • COLUMBUS, IND.

If you write maker identify as **IEN - 1462**

How 2 Dutton EconoTHERMS

CAN CUT YEARLY STEAM COSTS



OFF-CENTER FIRING • ROTARY COMBUSTION
GAS OR OIL FIRED • AUTOMATIC OPERATION
NO COSTLY CHIMNEY OR FOUNDATION
ONE "PACKAGE"—FACTORY PRE-TESTED

DO YOUR DAILY and seasonal steam loads vary widely? Many owners find that *two or more* Dutton EconoTherm Boilers give big advantages over a single larger unit — especially in *lower total steam costs!*

WITH TWO OR MORE EconoTherms, you can meet varying steam demands fast — and at *peak fuel efficiency.* Yet you save fuel each day and all year by operating just *one* unit during warmer weather, "off hours", nights, week-ends and holidays.

MULTIPLE UNITS give *extra* protection from plant shutdowns . . . and as your plant grows, it's easy to add another "packaged" EconoTherm. Because steam costs depend mostly on fuel and labor costs, *every EconoTherm feature* is designed to keep costs low!

CALL YOUR DUTTON REPRESENTATIVE — he'll carefully analyze your particular needs and offer cost-cutting suggestions.

CHECK FIRST with

WRITE FOR DUTTON ECONOTHERM BULLETIN EC-52M

Dutton BOILERS

Division Hapman-Dutton Company
KALAMAZOO, MICHIGAN
Boiler Builders Since 1880
Four Types — Sizes from 5 to 300 H.P.

If you write maker identify as IEN - 1464

Foot and Leg Protection

Foot-Snug Always!

NEW AO SPAT with Special Flare

Here's a new idea in spats — 3 stays instead of a spring clip on flare. Ideal for very hot jobs where curling up of flare is a hazard. "Stays" *keep* front of flare snug against foot! Ask your nearest AO Safety Products Representative for this highly serviceable product — Spat 7X171.

QUICK FACTS — Chrome tanned cowhide; elastic top; buckle and strap go under shoe to hold flare. Leg portion held in place by 2 arctic buckles and 2 snap fasteners. Protects instep and ankle; sparks, molten metal cannot roll down inside of shoes at any time.

American Optical
SAFETY PRODUCTS DIVISION

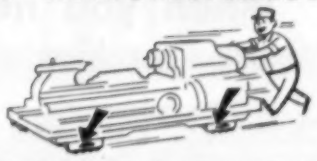
SOUTHBRIDGE, MASSACHUSETTS • BRANCHES IN PRINCIPAL CITIES

If you write maker identify as IEN - 1465

now you can

MOVE HEAVY MACHINERY

or tons of equipment, materials or supplies with a roller skid having the capacity to carry loads 3200 times its own weight . . .



IN ANY DIRECTION

. . . making 90° turns — or ANY kind of turn you desire up to 360° — giving you maneuverability into the tightest spots . . .

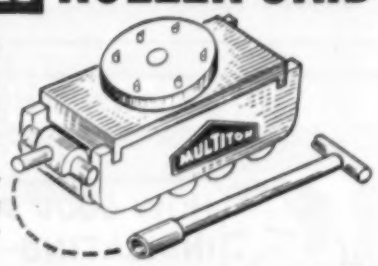
QUICKLY AND EASILY

Does away with old-fashion roller-bar methods. Light in weight, easy to store, you save labor and costly handling . . .

WITH THE NEW **MULTITON ROLLER SKID**

EQUIPPED WITH THE UNIVERSAL SWIVEL PLATE ACCESSORY . . .

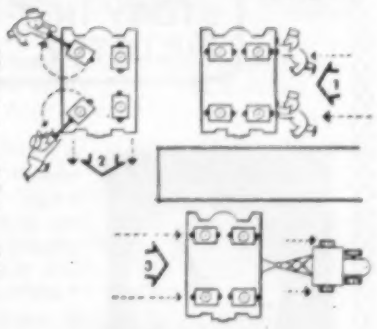
Specially designed for easy moving and turning of even the heaviest loads.



HERE'S HOW MULTITON *CAN WORK FOR YOU!*

As in this example . . .

1. Production machine is moved broadside out of location. Note position of four Universal Swivel Plate-Equipped MULTITON ROLLER SKIDS.
2. Crew is now swiveling two left-hand skids 90°, while right-hand skids have already been turned.
3. If a longer movement is necessary, power is used to pull load.



Let us show you how MULTITON can meet your specific needs. Write for Bulletin 1E today.

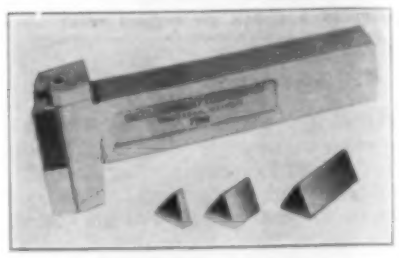
STOKVIS EDERA & CO., INC.

95 MADISON AVE., NEW YORK 16, N. Y.
MUrray Hill 3-4935

If you write maker identify as IEN - 1467

LATHE TOOLS . . Carbide bit holder carries separate carbide chip breaker

Source: VASCOLOY-RAMET CORPORATION
800 S. Market St., Dept IEN, Waukegan, Ill.



Thirty styles and sizes

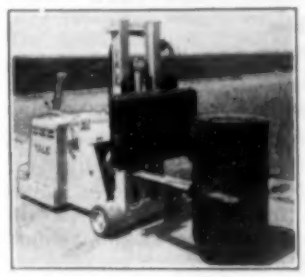
Triangular carbide inserts are held and positioned vertically by turning a socket screw at the top of this new holder. When the bit becomes worn it is reground straight across its top face. The carbide chip breaker, that forms an integral part of the holder, makes chip breaker grinding unnecessary.

The holder takes inserts measuring 1½ in. or ¾ in., or throw-away inserts that are designed to use all cutting edges on both ends without regrinding.

If you write maker identify as IEN - 1468

TRUCK . . Power fork attachment for company's hydraulic lift trucks

Source: YALE & TOWNE MFG. CO.
11000 Roosevelt Blvd., Dept. IEN, Philadelphia 15, Pa.



Quick secure pickup

Illustrated in position on a Worksaver truck, this new power fork attachment employs hydraulic pressure to move the forks in and out laterally to a center distance from 18 to 62 inches. The attachment includes interchangeable shoes to grip boxes, cartons, drums upon operating control levers.

If you write maker identify as IEN - 1469

CLEANING . . Mop equipment, two tanks and wringer on low truck

Source: GEERPRES WRINGER INC.
Dept. IEN, Muskegon, Mich.

Model 816

Floor-Knight is a new assembly of two tanks, a wringer and a caster equipped truck designed for use with 8 to 16-in. mops. The mop slides easily, without tearing, in and out of the wringer where it is protected against contact with the moving parts except the pressure plates. The bucket type tanks are hot dip galvanized after fabrication. The truck measures 25 by 12 in. and is equipped with 2½-in. ball bearing rubber wheel casters. Rubber bumpers can be specified.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 1470

SPEED UP
SLOW-FLOW MATERIALS

TARS
PLASTICIZERS
WAXES
MOLASSES
GLUES
RESINS
GREASES
GUMS . . ETC.

ACRAWATT ELECTRIC
DRUM HEATERS
FIT ALL STANDARD 22¼" DRUMS

- Proven Acrawatt THINSTRIP Construction.
- 3 Heats: 3000 Watts 230 Volts.
- Fast Heat Transfer.
- Aluminized Steel Encased.
- Enclosed Wiring Terminals.
- Low Radiant Loss.
- Fully Insulated.
- Easy to Install and Remove.

Kill time-consuming, costly slow-flow of viscous materials. Slip one or more **Acrawatt Drum Heaters** on your drums. **Make cloggy, sluggish contents get a move on.** Go on and off in a jiffy. Safe and simple to apply and operate. Use singly or in multiple. Save with Acrawatt reliability, long life ruggedness and efficiency. Order today.

ORDER NOW
EA. $19.50 F.O.B. CHICAGO
Spot Shipment
Shipping Wgt. 10 Lbs.

FOR BETTER ELECTRIC HEATERS AT BETTER PRICES, LET US QUOTE

ACRA INDUSTRIAL ELECTRIC CO.
9905 PACIFIC AVENUE • FRANKLIN PARK, ILLINOIS

If you write maker identify as IEN - 1471

Be fresh Stay fresh

wear a **DUPOR NO. 40**

THE RESPIRATOR THAT IS U. S. B. of M. APPROVED FOR TYPE "A" DUSTS

Guards against pneumoconiosis and silicosis producing dusts. Has over 40 sq. in. twin filter area. Sanitary face cloth. Soft rubber face mask. "Controlled-breathing" valves. Wearer has a panorama view with no blind spots. Unusual rubber, felt and plastic construction makes it extra durable, no denting or bending possible. Efficiency remains unimpaired even after rough treatment.

Sample sent $3.00 *pp*

H. S. COVER
South Bend, Ind.

If you write maker identify as IEN - 1472

THEY GRIND--NOT JUST RUB!

The RPM's stay up while grinding . . . not only when the grinder runs idle.

It is an established fact that surface speeds must stay up to approximately a mile a minute if you want to grind . . . not just rub. Every mechanic knows this, but an inexperienced buyer may order tools that maintain proper grinding speeds only when running idle. The speed of Kipp air grinders drops but slightly when put to work. That means better work . . . longer wheel life.

MADISON-KIPP CORP.
224 Waubesa St., Madison, Wis., U.S.A.

Write for KIPP Air Tool Catalog AT 3006

If you write maker identify as IEN - 1473

NEW SLIDE CHART

on *Carpenter* Stainless Steels

gives you information to help you select the proper Stainless for

Drawing	Machining
Forging	Riveting
Heading	Roll Forming, etc.

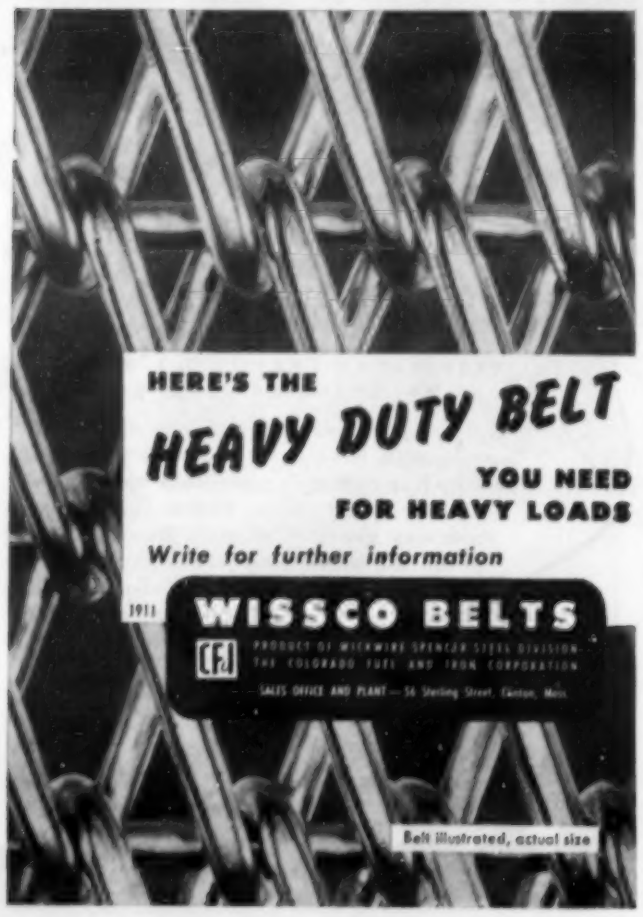
This new Carpenter chart also contains valuable data on the physical constants of many Stainless grades. For your copy, just return the coupon.

THE CARPENTER STEEL COMPANY
151 W. Bern St., Reading, Pa.

Please send me a copy of the new Carpenter Stainless Slide Chart.

NAME _____ TITLE _____
(Please Print)
COMPANY _____
ADDRESS _____
CITY _____ ZONE _____ STATE _____

If you write maker identify as **IEN - 1474**



If you write maker identify as **IEN - 1475**

Where corrosion . . temperature . . pressure cause other valves to fail . . .

THEY'RE "STICK-PROOF"

Operate Instantly . . Everytime . . Anytime

For more than 20 years, in practically every type of industry, HOMESTEAD LEVER-SEALDS have been giving trouble-free performance in services where extremes of temperature or pressure or corrosive line fluids cause ordinary valves to "stick" or "seize."

HOMESTEAD Lever-Seald PLUG VALVES are "Stick-Proof" because they're "Lever-Seald," which means that a powerful lever-and-screw device, built into every valve, assures positive action at all times under all conditions.

They operate fast, too—full open or closed by a quarter-turn; and because all operating parts are protected from line fluids, service conditions and weather, they last longer and cost less to maintain.

We make them in metals and alloys to suit your requirements in sizes 1½" to 12", for pressures from vacuum to 1500 lbs. and for temperatures ranging from 40° below zero to 1100° F.

WRITE TODAY for Valve Reference Book No. 39-3, No Obligation

HOMESTEAD VALVE MANUFACTURING CO.
"Serving Since 1892"

P. O. BOX 85 CORAOPOLIS, PA.

If you write maker identify as **IEN - 1476**

STOP DUST

***INSTANTLY* with DUSTKOP**

DUSTKOP 1400 cfm.

DUSTKOP 3600 cfm.

300 cfm to 10,000 cfm per unit (22 models)

Standard pre-tested, available from stock. Ask for catalog 605-2. Describe dust problem for recommendation by return mail. No obligation.

AGET-DETROIT CO.
401 Main Street
ANN ARBOR, MICH.

USEFUL INFORMATION
(Concluded)

If you write maker identify as **IEN - 1477**

TESTING . . Use of the spectrograph on lubricating oil provides a check on engine wear

American Locomotive Co.
Building 143, Dept. IEN, Schenectady 5, N. Y.

Thirty-one technical papers and articles at a recent symposium sponsored by the company are reported in new 146-page book, "Symposium on Diesel Locomotive Engine Maintenance." They cover such points as spectrographic analysis of lubricating oils to check on internal condition of the engine, use of the electron microscope to check lubricants.

If you write maker identify as **IEN - 1478**

STEEL TUBE . . Corrosion resistance on six stainless steels in new 8-page bulletin

Babcock & Wilcox Co.
4029 Fourth Ave., Dept. IEN, Beaver Falls, Pa.

Acetic Acid to Zinc Sulphate is the range of materials for which comparative corrosion resistance is given in Bulletin TDC-160 on six stainless Croloys. Resistance figures to several hundred corrosive media are listed to assist in selection of stainless tube and pipe for a desired application.

If you write maker identify as **IEN - 1479**

STEEL TUBE . . Bulletin gives tables of areas and weights on seamless steel tube

Ellwood Ivins Steel Tube Works Inc.
Oak Lane, Dept. IEN, Philadelphia 26, Pa.

Cross-sectional areas are tabulated in new 30-page bulletin for seamless steel tube from $\frac{1}{8}$ to 4 in. in outside diameter against wall thickness from .015 to .300 inch. These tables occupy 10 pages in the "Cross Sectional Area Bulletin", available on letterhead request. Other tables give weights against tube diameter, wall thickness, decimal and metric conversions.

If you write maker identify as **IEN - 1480**

WELDING . . Sound slide film on safety in oxyacetylene welding and cutting equipment

Air Reduction Sales Co.
1656 Lincoln Bldg., Dept. IEN, New York 17, N. Y.

Cartoon drawings and informal narrative are employed in new 35-mm. 20-min. sound slide film, "The Guy Behind Your Back," to stress factors affecting safety when operating oxy-acetylene welding and cutting torches and flame-cutting machines. (His name is Trouble.) The company will arrange for a free showing. The film goes with a 33⅓-rpm. record.

If you write maker identify as **IEN - 1481**

WELDING . . Suggestions on weld design and selection of welding method in 24-page bulletin

Ampco Metal Inc.
1745 S. 38th St., Dept. IEN, Milwaukee 46, Wis.

Bronze electrodes, filler rod and wire for arc welding are the subject of new Bulletin W-17. Information covers procedures, sizes, uses. In addition there is a section on selection of welding processes that describes metallic and carbon-arc, inert-gas tungsten-arc, inert-gas consumable-electrode and submerged-arc methods. Instructions are given on procedures.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as **IEN - 1482**

How thick is the coating?

Check with an ELCOMETER . . . new type thickness gauge for spot checks on non-magnetic coatings: porcelain enamel • paints • platings • foils • glass • paper • plastics • etc.

Accurate to ± 5% ± .0001".

For flat or curved surfaces in hard-to-get-at spots without loss of accuracy. Needle locking device assures a correct reading every time.

Comes with tough, leather case containing inner pocket for test strips.

Retail price ("A" Scale) $55.00 F. O. B. Cleveland, Ohio. Special scales available. Write for illustrated folder.

FERRO

FERRO CORPORATION
4157 E. 56TH STREET
CLEVELAND 5, OHIO

If you write maker identify as **IEN - 1483**

New

P&S

15 and 20 AMPERE SUPER SWITCHES

Designed for . . . Extra Long Life at Full Load . . . Maximum Service . . . Quiet Operation

Available in Single Pole, Double Pole and Three-Way—with Brown or Ivory Handles

Rated: 15 Amp., 120 Volt A.C., 277 Volts A.C.
20 Amp., 120 Volts A.C., 277 Volts A.C.

May be used on Fluorescent (Inductive) Loads and Incandescent Lamp Loads up to full rated capacity—on Motor Loads up to 80% of current rating of switch.

Drop us a line on your letterhead for complete information

Address Dept. IN

PASS & SEYMOUR, Inc., Syracuse 9, N. Y.
Offices: 71 Murray Street, New York 7, N. Y.
1229 W. Washington Blvd., Chicago 7, Ill.

If you write maker identify as **IEN - 1484**

STEEL BUILDINGS

go up in a hurry when you need a new factory—machine shop—warehouse

Fully Insulated Structure

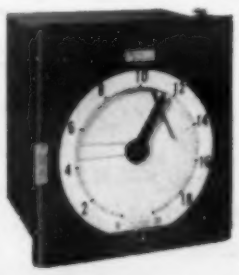
Speed of construction is a feature of our prefabricated steel building. It assembles from standardized trusses, columns, roof, side walls, insulation, windows, doors and accessory members. The completed assembly is "tailor made" to your requirements.

Single spans of 40, 48, 60 and 80 feet can be assembled in multiple. Standard sizes and 12, 16 and 20 feet in height. Standard length is any multiple of 16 feet. Windows are furnished in any 8-foot section. Hinged single doors are standard in an 8-feet section. Double hinged or overhead doors are supplied in any 16-foot section.

Folder I *8 pages of detail drawings, specifications and an inquiry form to request quotation*

BROOKVILLE MANUFACTURING CO.
P. O. Box 67 Brookville, Pa.

If you write maker identify as **IEN - 1485**



A few facts, just to whet your appetite: T-E recorders come in 2 types — potentiometer pyrometer and resistance bulb thermometer. They handle temperature ranges of −100°F — +600°F up to 0—3000°F, can be adapted easily to measure humidity, solution conductivity, speed, pH, DC, or other variables; they are accurate, rugged, easy to maintain. Want more data?

Write for Bulletin 60-Q.

Thermo Electric Co., Inc.
SADDLE RIVER TOWNSHIP, Rochelle Park P.O., NEW JERSEY
CANADA • THERMO ELECTRIC (Canada) Ltd., BRAMPTON, ONT.

If you write maker identify as IEN - 1486

IF You specify or make Stamping Dies--

THEN You will want to know about The Cerromatrix Method of Punch and Die Setting. This method will:

Save you money—as much as 500 man-hours saved in production time on complicated dies.

Save you time on delivery—

Give longer, trouble-free service.

Write now for Data Sheet A15

CERRO DE PASCO CORPORATION

Dept. 6, 40 Wall St., New York 5, N. Y.

If you write maker identify as IEN - 1487

Simply snap the KORNER KING right angle attachment on your present heavy duty drill (¼" or larger). LOW side gives you 80% more power at half rpm . . . HIGH side doubles your drill's rpm. Drill holes up to 2-9/16 inch in diameter in the most inaccessible spots — between joists and studs, in tight corners, etc. All with 100% safety because an exclusive RCS Torque Release eliminates dangerous torque reaction if drill jams . . . drive shaft continues turning if load or obstruction ever locks driven shaft or bit.

RCS SUPER SPEED BITS range in size from ⅝" to 2-9/16" diameters. Their new, simple design requires less torque, needs less thrust. Fast acting, cool running and long lasting, RCS SUPER SPEED BITS assure economical operation — as well as low initial cost. They're easy to sharpen, inexpensive to replace.

Extra extensions are available for these new RCS SUPER SPEED BITS which permit drilling holes, in perfect alignment, to just about any length.

If you use a drill, learn more about how RCS KORNER KING and RCS SUPER SPEED BITS can increase its efficiency and versatility.

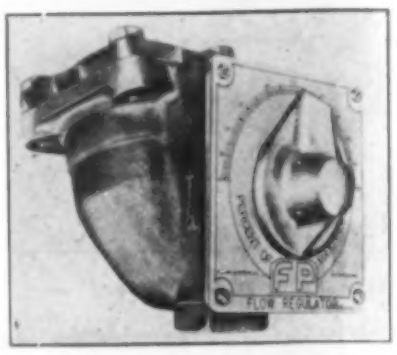
WRITE DEPT. IE-2 TODAY FOR COMPLETE DETAILS

R.C.S. TOOL SALES CORPORATION
JOLIET, ILLINOIS, U.S.A.

If you write maker identify as IEN - 1489

VALVE . . Flow regulator holds constant pressure differential

Source: FISCHER & PORTER CO.
17 Jacksonville Road, Dept. IEN, Hatboro, Pa.



Catalog 10-F-70

Flow inlet connects at the bottom of this new valve, the liquid moving into a closed end cylinder fitted with side outlet ports within the valve body. Liquid moving through these ports sets up pressure on a spring backed ring integral with a ported sleeve, the pressure tending to move the ring and sleeve to close the flow ports. Flow continues through an adjustable port, controlled by a knob on the face of the dial housing, to the outlet at the top.

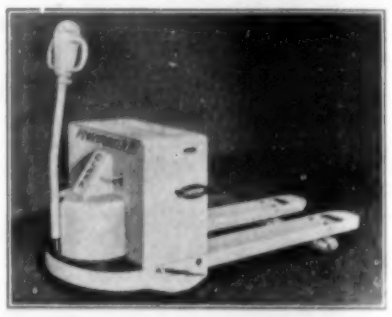
A passage connects between the outlet chamber and the spring side of the pressure ring to apply outlet pressure on this side of the ring. Thus a constant pressure differential is maintained to provide constant flow rate at any given valve setting independent of fluctuations in the inlet and outlet pressures.

Sizes range from ½ to 2 in. with capacity minimum at 0.5 to 5 gpm. and maximum at 8 to 100 gpm., based on water. The spring setting provides for a standard differential of 2 pounds. Construction includes a cast bronze body with stainless steel trim. The valve can be equipped with an air operated adjustment for remote actuation as well as for the manual adjustment shown in the illustration. The plate carrying the adjusting knob and scale measures 5 by 5 inches. List price is from $135 to $550.

If you write maker identify as IEN - 1490

TRUCK . . Motor driven lift and tractor designs, operator can walk

Source: CLARK EQUIPMENT CO.
Dept. IEN, Battle Creek 49, Mich.



Length is 26-in. plus load

Powrworker 26 designates a new line of motor driven hand trucks. The line includes low lift pallet and platform units in 2 and 3-ton capacities, and fork trucks in ¾ to 1½-ton ratings. All are based on 24-in. load center. The truck is designed so the operator can ride or walk beside it and direct it as well as control its movements at the steering handle.

Drive is at a 10½ by 6-in. wheel at the front. Power is supplied by a battery in underslung arrangement to maintain a low center of gravity. There are two speeds in forward and reverse, both speed and direction being selected by a spring loaded finger tip lever built into the control assembly at the end of the handle. Separate motors are employed for travel and hoist movements.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 1491

If you write maker identify as IEN - 1492

THE HAMILTON

PORTELVATOR®

(Portable Elevating Table)

MAKES IT *Easy* TO LIFT • LOWER LEVEL • TRANSPORT LOADS UP TO 5,000 lbs.

3 TABLE SURFACES
Can be worked at from **ALL 4 SIDES**

Slow or fast lift.

Self locking at any height.

4 POINT SUPPORT
(table can't tip)

Lift mechanism can be operated from either end.

Turns easily on anti-friction casters. Positive floor lock.

WELDED CONSTRUCTION

STYLE "A" (illustrated)*
Max. Height 40" Min. Height 28" Length 33" Width 21" Weight 225 lbs.
Capacity 2,000 lbs. (plus safety factor)

*THREE STANDARD MODELS TO CHOOSE FROM

GET THE DETAILS • WRITE FOR BULLETIN P-5248

THE Hamilton TOOL COMPANY
905 HANOVER STREET • HAMILTON • OHIO • U • S • A

If you write maker identify as IEN - 1493

CUT COSTS . . . SPEED PRODUCTION

BRADY STOCK
QUIK-MASKS®
MOUNTED ON CARDS for
• PAINTING • PLATING
• TUMBLING • BUFFING

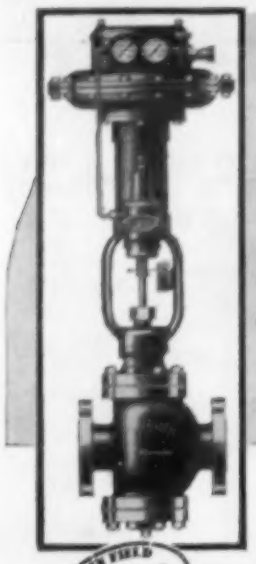
Protect machined parts, name plates, holes, threads, designs, etc., during finishing operations. Eliminate slow, costly hand cutting of masks and stencils.

Self-adhesive Brady QUIK-MASKS are pre-cut to sizes and shapes you need. They come mounted on handy dispenser cards or individual liners for speedy application. You just *peel, press, protect.* Hi-Heat resistant to 300° F. Quickly removed after baking without residue. Squares, circles and rectangles in all standard production sizes available from stock. Specials made to your exact requirements. Send for FREE samples and idea-packed literature.

MANUFACTURERS OF SELF-STICKING PRODUCTS
W.H. BRADY COMPANY
756 WEST GLENDALE AVE., MILWAUKEE 12, WIS.

If you write maker identify as IEN - 1494

If you write maker identify as IEN - 1495



FISHER

WIZARD CONTROLLERS

YOU'LL ALWAYS SEE THEM WHERE RELIABILITY COUNTS AND DEPENDABILITY IS A MUST

The ingenious, simply-designed mechanism of Fisher Wizard Controllers provides extreme accuracy and dependability in pressure control. They are individually built to meet your exact operating conditions, and are guaranteed to give satisfactory performance.

IN FIELD PROVED SERVICE

THE "BRAINS" OF WIZARD CONTROLLERS

HIGH PRESSURE
Bourdon tube pressures from 5 to 10,000 P.S.I. Throttling and snap acting types. Diaphragm, yoke or remote panel mounting.

LOW PRESSURE
Bellows pressure from ½ to 15 P.S.I. Diaphragm, yoke or remote panel mounting.

FISHER GOVERNOR COMPANY • Marshalltown, Iowa

If you write maker identify as IEN - 1496

Generalift PALLET BOXES

1. CUT MATERIALS HANDLING COSTS
2. REDUCE STORAGE COSTS

SEND FOR FREE BOOKLET

General Box COMPANY
1815 Miner Street
Des Plaines, Illinois

Factories: Cincinnati; Denville, N. J.; Detroit, East St. Louis, Kansas City, Louisville, Milwaukee; Prescott, Ark.; Sheboygan; Winchendon Mass.; General Box Company of Mississippi, Meridian, Miss.; Continental Box Company, Inc., Houston.

If you write maker identify as IEN - 1497

Tighten the Reins—Stop Loose Buying

Use **NUPLA** hammers
The one soft-faced line serving all industry

with interchangeable NUPLAFLEX tips

"A hammer for every purpose... ...a purpose for every hammer"

MIGHTY—but gentle

SIMPLIFY—SAVE INVENTORY NUPLA hammers with their complete size and weight selection do the whole job... easily interchangeable NUPLAFLEX TIPS in 5 hardnesses meet all soft-faced pounding requirements... replace rubber, rawhide, lead, plastic and all other lines of soft-faced hammers.

HAVE TREMENDOUS ECONOMY APPEAL Super-durable NUPLA hammers have proved to outwear ordinary hammers 10-50 to 1... and have played important roles in many cost reduction programs. Write for actual case histories.

THE CHOICE OF INDUSTRY Many users specify NUPLA with NUPLAFLEX TIPS, including General Motors, Chrysler, Allis-Chalmers, Ford, Lockheed, Westinghouse, the Army, Navy and Air Force.

WORKERS PREFER THEM NUPLA hammers provide solid blows without sting... reduce fatigue. Also safety tools... non-chipping, no flying particles, sparkproof.

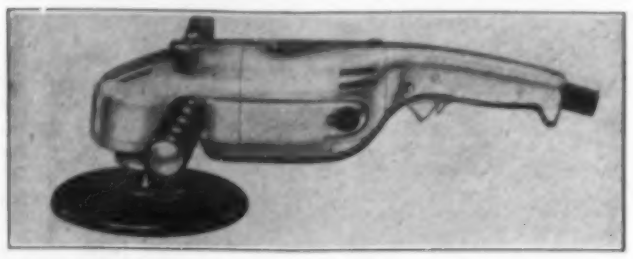
New Plastic Corporation,
1026 North Sycamore, Dept. No. 107, Los Angeles 38, California
Please tell me how to increase the efficiency and reduce the costs of my pounding operations with NUPLA hammers.

Name_____
Street Address_____
City_____ Zone____ State____

If you write maker identify as IEN - 1498

SANDING . . Portable electric tool drives 7 in. disc, standard and heavy

Source: SKIL CORPORATION
5039 Elston Ave., Dept. IEN, Chicago 30, Ill.



$72 and $82

Model 851, standard, and Model 852, heavy duty, are new disc type sanders in the company's line of portable electric tools. Drive is by a 110-volt universal motor for disc speed of 4,500 rpm. Length is about 16 inches. Weight is 11¾ lb. for the standard design and 13 lb. for heavy duty assembly.

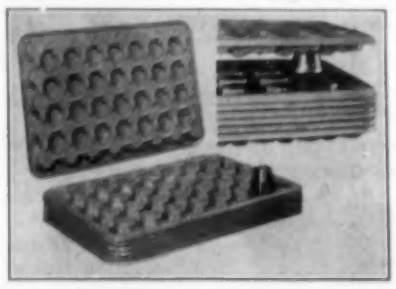
Shafts are mounted on ball bearings. The disc is backed by a resilient pad. Control centers at a dust tight switch equipped with a lock for continuous operation.

Equipment includes a 7-in. molded rubber pad, pad nut, grinding wheel flange, three sanding discs, detachable front handle for right or left hand use, a tool rest, wrench and 3-wire cord and connector.

If you write maker identify as IEN - 1499

HANDLING . . Plastic tray to carry and store specified work

Source: KLISE MFG. CO.
50 Cottage Grove St., Dept. IEN, Grand Rapids 2, Mich.



Styrene co-polymer

Illustrated is a typical example of work handling and storing trays the company is prepared to manufacture for specified application. Each tray is made of molded plastic to fit given work. The individual pieces are held securely and safely for handling between machine operations and for stacking in storage. The trays are strong, durable, clean, non-corroding and non-abrasive.

If you write maker identify as IEN - 1500

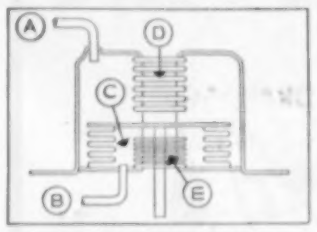
If press work or die casting is a factor in your operations, it may pay you to investigate an offer made by Lake Erie Engineering Corp., Box 68, Kenmore Station, Buffalo 17, N. Y. The company will survey your requirements for either type of equipment and, to your order, will supply and install all the basic machinery, tools and dies, conveyors, loading mechanisms, furnaces and related auxiliaries. It will place the equipment in operation and train supervisory and production personnel. It will assume responsibility for satisfactory operation of the equipment as an integrated plant.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

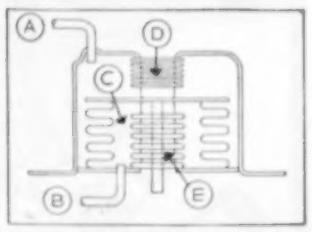
If you write maker identify as IEN - 1501

A PAID NEWS ADVERTISEMENT BY CLIFFORD MFG. CO.

PRESSURE CONTROL of differential or absolute pressure provided by new differential pressure bellows assembly.



Pressure greater at inlet (A) compresses large bellows, thrusts actuating rod downward.



Pressure greater at inlet (B) extends large bellows, draws actuating rod upward.

The Clifford Differential Bellows Assembly consists of large operating bellows (C) and two smaller sealing bellows (D), (E). Pressure may be applied either inside or outside (C). Movement of the actuating rod is then proportional to the *difference* between inside and outside pressures. Either side of (C) may also be evacuated and sealed. Movement of the rod is then a function of absolute pressure. Rod can actuate switches, valves, etc., to control an indicated differential or absolute pressure.

The new unit is adaptable to all types of processes where pressure within a fluid system must be automatically equalized, or where absolute rather than gauge pressure must be maintained as in aircraft fuel systems, for example. Assemblies are made of brass, stainless steel, monel and other suitable bellows materials.

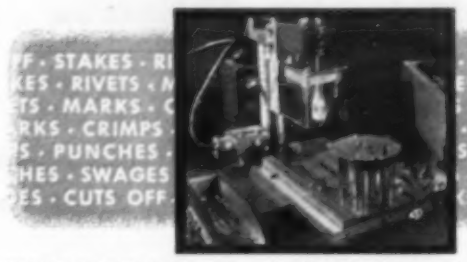
Clifford is glad to answer your questions or provide "bellows-engineering" help.

Write for bulletin: "*What To Consider When Selecting A Metallic Bellows.*"

CLIFFORD MANUFACTURING COMPANY
146 Grove St., Waltham 54, Mass.
Division of Standard-Thomson Corporation

If you write maker identify as IEN - 1502

ELECTROPUNCH SAVES TIME for Telechron Clocks!



ELECTROPUNCH — the all-electric impact hammer, fastens front plates to Telechron clocks 575% faster! Here's how: — the assembly, after being positioned, is simply slipped under the ELECTROPUNCH, tripping a limit switch that automatically cycles the work stroke. Total time: 1.93 seconds — as compared to the 11.10 seconds previously required for fastening with a power-driven screwdriver.

Delivers impacts up to 10,000 lbs. — up to 125 blows per minute! Economical to buy, operate and maintain — adaptable to wide range of applications. Operable from 115 V., A.C. outlets.

Write — or phone Bigelow 4-6370 — for folder showing complete line of Black & Webster electric production tools.

BLACK & WEBSTER, INC.
Dept. 17, 445 Watertown Street, Newton 58, Mass.
Solenoid-operated Production Tools

If you write maker identify as IEN - 1503

Get Out From Under-"

Federal "J" Siren cuts through high noise levels to save lives!

You never know when a cable might break or a load might shift. Unless warned, workers on the craneway face swift falling death from above.

Shouting won't do it, nor will an ordinary signal. You need a powerful, distinctively high-pitched Federal "J" siren... a siren that overcomes intensely high noise levels. The Federal "J" is a heavy duty siren specifically designed for electric cranes and operating long periods of time repeated 24 hours a day. Where heavy duty, high-frequency of operation is necessary — where distinctive, penetrating sound protection can save lives — install a Federal "J" siren.

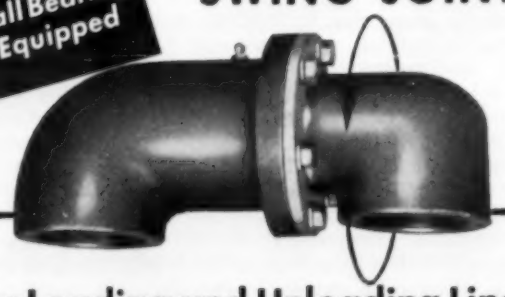
Write now for Industrial Sirens Bulletin No. 111

FEDERAL ENTERPRISES, INC.
Formerly: Federal Electric Company, Inc.
8745 S. State Street
CHICAGO 19, ILLINOIS

If you write maker identify as IEN - 1504

NEW! Ball Bearing Equipped

BARCO SWING JOINTS



for Loading and Unloading Lines

BARCO'S new, attractively priced, all-steel ball bearing *Swing Joints* are specifically designed to provide for movement and flexibility in metal pipe loading and unloading lines handling gasoline, oil, alcohol, chemicals, and other fluids.

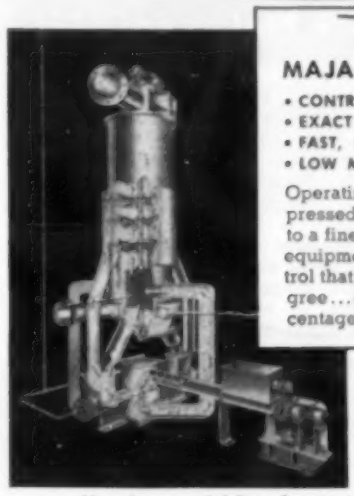
11 DIFFERENT STYLES—Barco offers single swing, double swing, and counterbalance styles to meet every need. Sizes 2", 2½", 3", 4".

SUPERIOR DESIGN — The ball bearings will not fall out when joints are taken apart. Long bearing provides adequate pipe support. Special O-ring seal insures leakproof service over wide temperature range, −40°F to +225°F.

INFORMATION—Send for latest Catalog No. 400 and engineering information. BARCO MANUFACTURING CO., 538C Hough St., Barrington, Illinois.
A Chicago Suburb

If you write maker identify as IEN - 1505

IS PULVERIZING on your program?



Find Out About
MAJAC JET PULVERIZERS

- CONTROLLED FINENESS
- EXACT PARTICLE DISTRIBUTION
- FAST, CONTINUOUS PRODUCTION
- LOW MAINTENANCE COSTS

Operating by steam, gas or compressed air, the Majac Jet will grind to a fineness impossible with other equipment. In addition you can control that fineness to any desired degree...or provide for various percentages of different micron sizes.

Pilot plant test grinding, and custom grinding on contract basis, also available.

Write for New Bulletin Containing Complete Engineering Data.

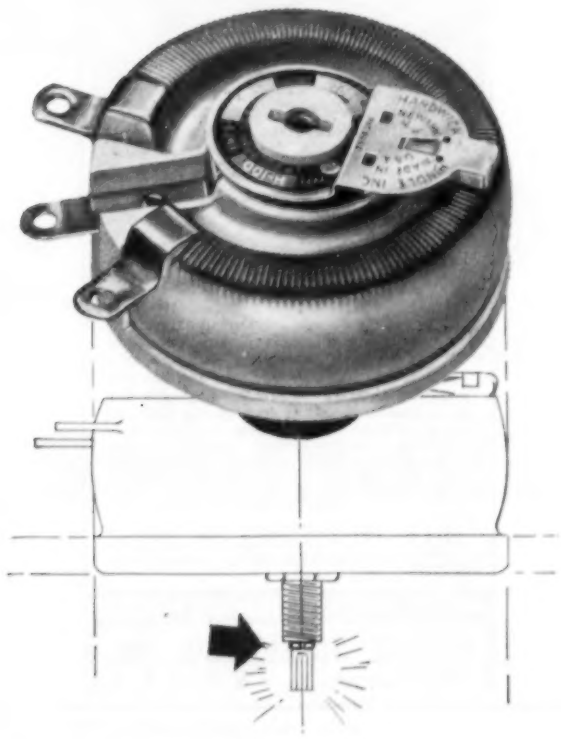
Here is a partial list of materials which the Majac Jet has pulverized successfully:

Alumina · Aluminum Sulphate · Carbon · Ceramic Frit · DDT · Feldspar · Fungicide · Graphite · Gypsum · Iron Ore · Limestone · Mica · Paint Pigments · Plastics · Pumice · Quartz Sand · Silica Gel · Talc

MAJAC INCORPORATED
23rd ST. and P.R.R. (Pittsburgh District) SHARPSBURG, PA.

If you write maker identify as IEN - 1506

Let a simple retaining ring save metal and money for you!



Retaining rings saved material and assembly time on this finely made rheostat. They continue to save money both for Hardwick Hindle—the manufacturer—and for its customers.

Looking at this application you may say it was obviously a "natural", but there are literally thousands of cases where retaining rings can save as much or more.

Examine *your* machines and products to see where the use of these inexpensive modern artificial shoulders can cut your costs too.

It is needlessly expensive and wasteful to hold a mechanism in place with unnecessarily big shoulders or collars, or to temporize with small cotter pins etc., etc.

Let us show you how these high grade steel rings can do a thoroughly efficient job, saving money for you as well as for your customers.

More and more applications of retaining rings are being made every day.

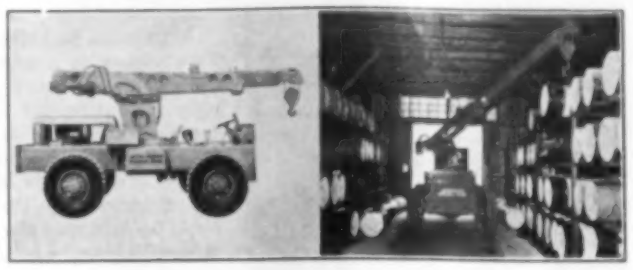
Write today for descriptive folder.

THE NATIONAL LOCK WASHER CO.
NEWARK 5, NEW JERSEY • MILWAUKEE 2, WISCONSIN, U. S. A.

If you write maker identify as IEN - 1508

CRANE . . Mobile hydraulic assembly for general duty, 4 ton at 10 feet

Source: AUSTIN-WESTERN COMPANY
601 N. Farnsworth, Dept. IEN, Aurora, Ill.



Illustrated bulletin, "Hydraulic Crane"

The load hook on this new hydraulic crane can be lowered to 30 ft. below ground level. It can be raised to 24 ft. above the ground, rotated through a complete circle and moved in or out between 10 and 24 ft. from the center of the boom swivel support. Overall height is 9 ft. with the boom in horizontal position. Width is 8 ft. to pass through factory doors. Speed is from 5 to 15 mph.

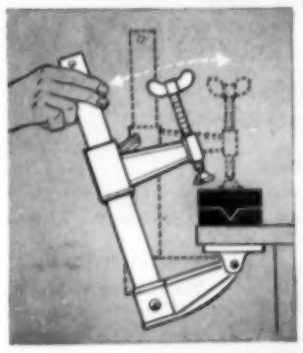
Travel drive and power for the hydraulic movements is provided by a gasoline or diesel engine in connection with a reversing three-speed transmission. The hydraulic pressure is employed to lift and lower the hook and boom, to rotate the swivel, extend and retract the boom and to steer at all four wheels. Turning radius is 15 feet.

Rated capacity of 4 ton is based on a 10-ft. radius. The rating is 3,200 lb. at 18 ft. and somewhat less for the full boom extension to 24 ft. horizontally. The crane can be traveled with a load up a 20 per cent grade. The boom can be reached into confined locations to place or to pick up and extract a load. Double controls can be provided so the operator can swivel in his seat to face in either direction. The crane can be assembled on a cab equipped truck in addition to the tractor mounting illustrated.

If you write maker identify as IEN - 1509

CLAMP . . Adjustable bar design with pivoted foot on stationary jaw

Source: ADJUSTABLE CLAMP CO.
414 N. Ashland Ave., Dept. IEN, Chicago 22, Ill.



Jorgensen Hinged

New clamp can be mounted permanently by means of its pivoted foot on a jig, fixture or under a bench top. The pivot action permits swinging the clamp assembly out of the way or into clamping position for final tightening by means of the hand screw. Application can be made singly or in multiple. Extra hinge plates are available for interchange of the clamping unit from one position to another.

Four designs have throat capacity measuring 2 to 5 in. and opening capacity from 6 to 30 inches. Construction is in malleable iron for the stationary and movable jaws and the plate. The bar is high carbon steel. The screw is cold drawn steel. Gripping action is by compression against the bar from the movable jaw so no notches are required in the bar.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 1510

FOR PHENOMENAL SAVINGS IN PLANT LAYOUT

TEM BLUE PLATE PRINTS

FROM LAYOUT TO BLUEPRINT WITH NO DRAFTING

TemPrints are outline prints on transparent film, reproducing to exact scale the standard machines in your plant or made to engineering specifications of your particular equipment . . . TemPrints are also supplied for walls, partitions, windows, office furniture and shipping equipment.

TemPrint Grids are transparent sheets cross-lined to 1/4" scale suitable for layout and floor plans.

When TemPrints are cutout and applied to the grids, the result is an accurate layout of your plant or office. Any number of duplicate prints accurately reproduced in the same size may then be made by processing through an Ozalid machine.

SIMPLY MAKE THE LAYOUT — AND THE LAYOUT WILL MAKE YOUR PRINTS
TEMPRINTS PUT THE PLAN INTO YOUR PLANT

MARINE SCALE INDUSTRIAL MODELS

Marine has specialized in scale models for many years. Marine Miniatures are accurate reproductions to scale of well-known plant machinery and equipment. All models are dimensionally accurate — may be identified instantly. A special catalog is available on request.

SEND FOR COMPLETE ILLUSTRATED CATALOG TODAY!

HARMAN ASSOCIATES
DEPT. H-3, HALESITE, L. I., N. Y.

If you write maker identify as IEN - 1511

$2690 f.o.b. factory — 16" x 6' Toolroom Lathe less electrical equipment

—A BETTER VALUE

Here is a lathe that will give you maximum return for every dollar invested. Versatile . . . highly accurate . . . easy to operate, it makes difficult close-tolerance jobs easier. Designed for hard industrial use, it will continue to turn out, year after year, the kind of precision work modern tooling demands. And you'll be surprised at the low maintenance cost. Prompt delivery — time payment terms available. Write for catalog.

SOUTH BEND LATHE
SOUTH BEND 22, IND. • *Building Better Tools Since 1906*

If you write maker identify as IEN - 1512

SAVE! SPECIFY "U. S." ALUMINUM WIRE

Specify U. S. Aluminum Wires and enjoy the same service efficiency at big savings in installation costs! Aluminum wires have current-carrying capacity of 84% that of copper, and on many circuits it is better to use aluminum instead of copper, size for size. A larger size aluminum conductor can be specified for equal voltage drop on long A.C. runs, still retaining a weight and cost advantage. The inherent lightness and easy handling of aluminum bring savings to you. All standard sizes from No. 12 Awg to 2,000,000 circular mils are available.

Write for free pair of informative booklets telling all about Aluminum Wires and Cables.

UNITED STATES RUBBER COMPANY
Electrical Wire and Cable Department
ROCKEFELLER CENTER • NEW YORK 20, N. Y.

If you write maker identify as IEN - 1513

IMPROVED No. 90A Series WILLSON MonoGoggle

Wider, Deeper Frame Gives Greater Clearance Over Spectacles

We've taken the popular Willson MonoGoggle® design and made it with a deeper and wider pliable, transparent vinyl frame with grooves molded into the sides for extra roominess over glasses. It provides protection against light impact hazards on such operations as spot welding, buffing, wood working and chemical handling.

Ask your Willson distributor to show you the new No. 90A Series MonoGoggles, available with either direct or indirect ventilated frames or non-ventilated styles. Or write for bulletin.

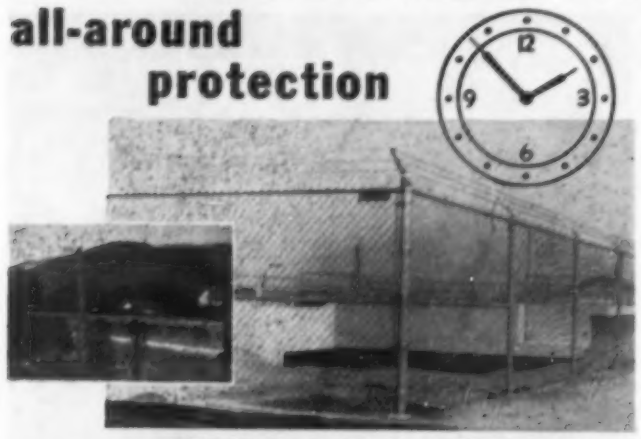
Side view shows molded-in grooves in sides of frame provide ample clearance for spectacle temples — removes interference with eye glass comfort.

WILLSON

WILLSON PRODUCTS, INC., 217 Washington St., Reading, Pa.

If you write maker identify as IEN - 1514

all-around protection



with REALOCK FENCE

With a Realock Fence you have protection that's all around your grounds . . . all around the clock—an ever-present, ever-vigilant guard against arson, burglary, vandalism and other costly hazards.

Noted for its rugged construction, Realock Fence costs little or nothing for maintenance; can be depended on for long-lasting resistance to the weather.

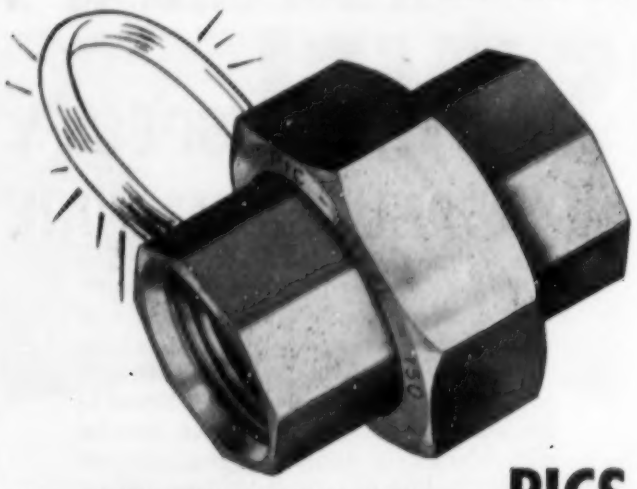
Consult your classified telephone directory for the nearest Sales Office, or write to any of our three Division offices for free estimate or catalogue.

THE COLORADO FUEL AND IRON CORPORATION, Denver and Oakland
WICKWIRE SPENCER STEEL DIVISION, Buffalo

REALOCK FENCE
THE COLORADO FUEL AND IRON CORPORATION
BRANCHES IN ALL KEY CITIES

1943

If you write maker identify as IEN - 1515



WED YOUR NEW EQUIPMENT TO PICS *for a Happy Union!*

PIC STEEL UNIONS blend perfectly with appliances because they're bright, gleaming, good looking. Functionally they're strong—ends are heavy steel pipe coupling stock, uniformly flat-sided for rapid installation with open end wrenches. Special wedge type bronze seat gives tight, safe closure. 100% zinc plated (including threads) to protect against rust. Pics are priced right — less than a galvanized, no more than a black malleable union!

For 150 lb. service — write for FREE Samples
DART UNION COMPANY
130 THURBERS AVENUE, PROVIDENCE 5, R. I.

If you write maker identify as IEN - 1516

Pack, Inspect and Assemble

SPEEDS UP PRODUCTION

An all-purpose portable belt conveyor, work table and straight-line production system, with and without side leaves. Available up to 100 ft. long in 10 ft. easily assembled sections.

PORTABLE OR STATIONARY

The perfect mechanized table for assembly, inspection and packaging operations. Available in steel or stainless steel with fixed or variable speed.

Narrow belts and boosters available.
Advise us of your requirements.
Visit us at Booths No. 116 and 118 at the PACKAGING SHOW.

FREE!

ISLAND EQUIPMENT CORP.
27-01 Bridge Plaza North
Long Island City 1, N. Y.

Please send Bulletin 1P-1 on Island Unitized Conveyor Tables. Dept. IEN-2

NAME _____
ADDRESS _____
CITY _____ STATE _____

If you write maker identify as IEN - 1517

INSULATING . . Foamglas sections, aluminum covered for pipe to 14 inches

Source: PITTSBURGH CORNING CORP.
One Gateway Center, Dept. IEN, Pittsburgh 22, Pa.

Easy to clean

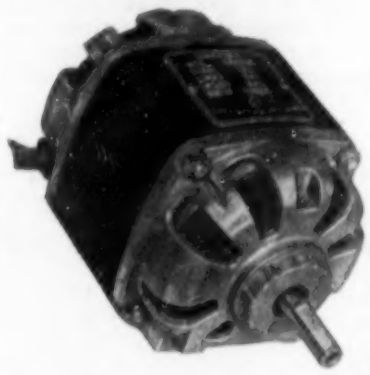
Aluminum jacketed Foamglas is a new form of the company's pipe insulation for a temperature range between minus 50 and plus 800 deg. F. It is characterized by the outer book-hinged aluminum jacket which keeps the insulation dry and proof against attack by fire, vapor, rot, vermin, acid.

The sections are 18 in. in length and from 1 to 4 in. in thickness, depending upon the temperature application. Pipe sizes range from ¼ to 14 inches. A thin coat of sealer, such as Foamseal, is applied to the joints for refrigerated lines. The sections are slipped into place, banded at the joints and center of each section.

If you write maker identify as IEN - 1518

MOTOR . . Miniature induction unit particularly to drive office machines

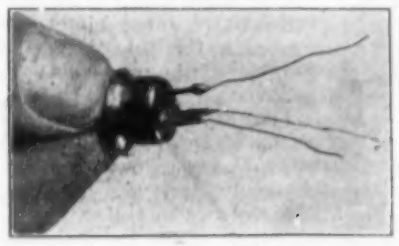
Source: BODINE ELECTRIC CO.
2254 W. Ohio St., Dept. IEN, Chicago 12, Ill.



Two years in test duty

Height and width of this new Type K-4 motor measure 2⅞ inches. The rectangular shape permits installation in confined areas. The end shields are designed for flush and recessed base mounting, resilient ring mounting, extended stud end mounting or semi-special flange mounting. Operation is at constant speed without noise or radial interference. Three sizes, with reference to housing length, measure 2⅛, 2½ and 2⅞ inches. The design is available for either split phase or capacitor type operation with constant speed at 1,725 or 3,450 rpm.

If you write maker identify as IEN - 1519



Miniature transistor, with an output rating of 20 watts, has been developed by Minneapolis-Honeywell Regulator Co., Station 64, Dept. IEN, Philadelphia 44, Pa. It is being built on a pilot line basis.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 1520

Specify GM PRECISION-ENGINEERED
SERVO MOTORS

RELIABLE PERFORMANCE
RUGGED CONSTRUCTION

In the operation of—
- GUNFIRE CONTROLS
- ROCKET CONTROLS
- GUIDED MISSILES
- AIRCRAFT CONTROLS
- INDUSTRIAL CONTROLS

G-M Servo Motors can be supplied to meet rigid military specifications with regard to humidity, temperature range, vibration and altitude. Available in 2, 4 or 8 pole construction and for frequencies from 60 to 400 cycles.

Write today for complete information.

Another product of GM LABORATORIES • Inc.
4334 NORTH KNOX AVENUE, CHICAGO 41, ILLINOIS

If you write maker identify as IEN - 1521

HOW TO PACKAGE SMALL ITEMS *Safely . . . with Visibility*

LOOK INTO LUSTEROID PLASTIC VIALS and TUBES

There's a LUSTEROID plastic container just right for carrying items too small for ordinary packaging. These crystal clear vials and tubes are strong, tough, unbreakable. Save you money, too. No labels to affix because LUSTEROID is printable. Cuts handling and shipping expense because it's so light in weight. Wide choice of colors in clear or opaque in standard diameters from ¼" to 1½" and lengths up to 6". Cork, slip-on and screw-cap closures.

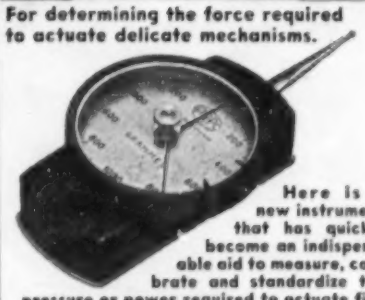
Write for samples and details today.

LUSTEROID CONTAINER COMPANY, INC.
10 West Parker Avenue, Maplewood, N. J.

If you write maker identify as IEN - 1522

NEW PRECISION DYNAMOMETER

For determining the force required to actuate delicate mechanisms.



Here is a new instrument that has quickly become an indispensable aid to measure, calibrate and standardize the pressure or power required to actuate fine precision mechanisms and spring tensions of ELECTRIC CONTACTS - RELAYS - CLOCKS - TELEPHONES - BUSINESS MACHINES - MICRO MOTORS for Electric Razors - WINDSHIELD WIPERS - TIME SWITCHES - ETC. . .

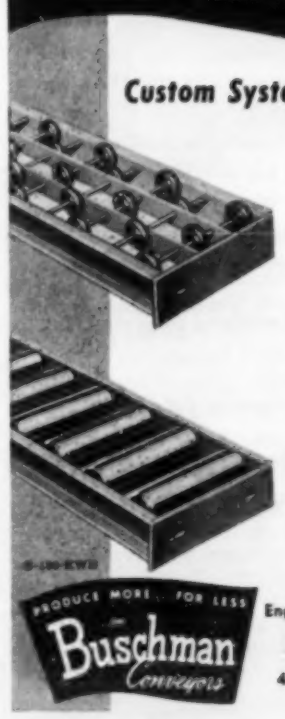
THE DYNAMOMETER IS AVAILABLE IN 2 SIZES WITH OPERATING PRESSURES RANGING FROM 5-15 GRAMS TO 100-1000 GRAMS.

WRITE FOR ILLUSTRATED FOLDER

GEORGE SCHERR CO., Inc.
200-EN Lafayette St. • N. Y. 12, N. Y.

If you write maker identify as IEN - 1523

Buschman Wheel and Roller CONVEYORS



Custom Systems from Standard Units

Gravity conveying systems to meet your needs are set up quickly from Buschman wheel and roller components. Lightweight aluminum or steel construction and Quick-Eez coupling make rearrangement fast and easy.

Buschman wheel and roller components include straight and curved sections in three widths, switches, adjustable tubular stands and accessories.

Buschman wheel and roller conveyors are stocked at the factory and by leading distributors throughout the country, who can engineer systems to meet your needs.

Write today for Bulletin 15

Complete Conveyor Systems
For All Types of Industries
Engineered • Manufactured • Installed

PRODUCE MORE . . FOR LESS
Buschman Conveyors

THE E. W. BUSCHMAN CO.
4447 Clifton Ave. • Cincinnati 32, Ohio

If you write maker identify as IEN-1524

Here are a few good reasons why Ex-Cell-O Drill Jig Bushings last longer and perform better:

1. Premium grade tool steel is selected for wear resistance and heat treated to 62-64 Rockwell "C".
2. Every bushing must measure up to Ex-Cell-O precision standards, as well as to A.S.A. standards.
3. High finish is ground on inside and outside diameters, and under the head for perfect bearing.

To satisfy the needs of your purchasing and engineering departments ask for an adequate supply of Ex-Cell-O Bushing Catalogs.

EX-CELL-O CORPORATION
DETROIT 32, MICHIGAN

MANUFACTURERS OF PRECISION MACHINE TOOLS • CUTTING TOOLS • RAILROAD PINS AND BUSHINGS • DRILL JIG BUSHINGS • AIRCRAFT AND MISCELLANEOUS PRODUCTION PARTS • DAIRY EQUIPMENT

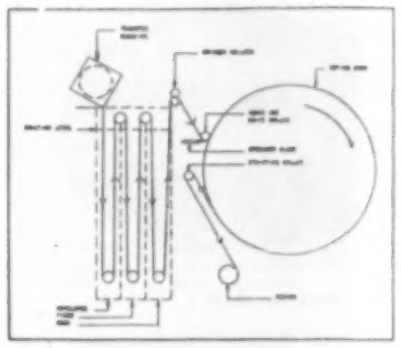
51-54

If you write maker identify as IEN-1525

If you write maker identify as IEN-1527

PHOTOGRAPHING . . Paper processor develops and fixes continuous rolls

Source: REMINGTON RAND INC.
315 Fourth Ave., Dept. IEN, New York 10, N. Y.



Catalog D4105

Operating speed is normal at 10 fpm. for this new daylight type photographic processor. It develops, fixes and washes the exposed paper as it comes from a roll. It will handle rolls to 5 in. in width and to 350 ft. in length. Floor space measures 16 by 47 inches. Height is 52 inches. Weight is 94 pounds.

The assembly includes a tank for developer, kept under automatic temperature control at about 100 deg. F., a tank for fixer, and one for washing which takes about 1½ gpm. of water per minute. The paper rides over a drying drum heated by infrared lamps operating on 110-volt ac. The processing cycle, including drying, requires about 2¼ minutes. Threading length is 23 feet.

Threading is by means of a parchment leader or an attachment with which successive rolls of exposed paper can be spliced. The paper is held in a light-tight magazine to enter an opening in the wet section cover and to leave the machine wound on a cardboard or similar core.

If you write maker identify as IEN-1528

GAGE . . Dial type comparator sets to master to check small work

Source: GEORGE SCHERR COMPANY
200 Lafayette St., Dept. IEN, New York 12, N. Y.

Non-reflecting

New assembly of the Millimess amplifying dial indicator, previously described IEN-980-54, is available in combination with a stand, column and bracket to check height dimensions on small work. The assembly is set up to a master or to gage blocks. It has vertical capacity to 2.4 inches.

The base mounts a table 2 in. in diameter. Its center is located 2 in. in front of the support column. The stand lists at $23.50. The indicator lists at $17.50 or $35, in Model A or Model B, reading respectively in 0.0005-in. divisions with a range of 0.020 in., and in 0.0001 in. divisions with a range of 0.004 inch.

The indicator is shock proof and is provided with an overtravel of 3/32 in. to prevent damage when oversize work is inserted. A cable release replaces the usual lifting lever to pick up the contact point and eliminate any effect of hand temperature, unequal pressure or vibration. Zero adjustment is by turning a knurled thumb screw on the outside of the housing. The tolerance hands are located on the outside of the dial so they can be set by hand.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN-1529

POWERS Controlled

In the Most Efficient REA Plant of the Wolverine Electric Cooperative, winner of the 1952 Award for economical operation, Powers Air Operated controls were used to maintain Lube Oil and Jacket water at the right temperature.

Powers Controls shown at left have been thoroughly time tested and proven reliable on many large engine installations.

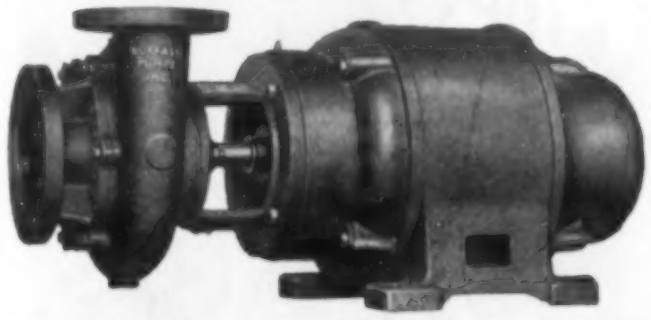
For Large or Small Air Compressors, Gas or Diesel Engines Powers has the right control that will insure the right temperature at all times regardless of variations in load or seasonal changes in temperature of water supply. Write for Bulletin RDIG. (b52)

THE POWERS REGULATOR CO.
Skokie, Ill. • Offices in over 50 Cities

Over 60 Years of Automatic Temperature and Humidity Control

If you write maker identify as IEN-1530

Efficient . . . Space-Saving . . . RUGGED AS THEY COME!



"BUFFALO" Close-Coupled Pumps For Clear Water or Chemicals

Everything about these pumps is just about punishment-proof . . . the heavy cast brackets, and shell, husky shaft that's always in perfect alignment, the extra-deep stuffing box. And the sturdy, accurately machined "Buffalo" enclosed bronze impeller assures lastingly high efficiency. Standard construction is bronze-fitted, though special alloy trims are available. Capacities up to 1100 gpm (at 80' head). Write for Bulletin 975-D for the full data.

BUFFALO PUMPS, INC.
496 BROADWAY • BUFFALO, N. Y.
Subsidiary of BUFFALO FORGE COMPANY
CANADA PUMPS, LTD., Kitchener, Ont.
Sales Representatives in all Principal Cities

If you write maker identify as IEN-1531

WATCH OUT, ALFONSO, ONE TUMBLE'S ALL IT TAKES...

Indifference can quickly spoil a hard won reputation for quality performance. You don't take chances when you stick to a solder you know and trust . . . time-proved Kester Solder, constant in solder alloy and always consistent flux formulae.

WRITE TODAY *for your free copy of the Kester Technical Manual, "SOLDER and SOLDERING Technique."*

KESTER

SOLDER COMPANY
4201 Wrightwood Avenue • Chicago 39, Illinois
Newark 5, New Jersey • Brantford, Canada

If you write maker identify as IEN-1532

ALLIS-CHALMERS **Combination STARTERS**

a magnetic starter and a safety switch in one compact unit . . .

Starter has silver-to-silver double break contacts and non-carbonizing arc chambers. Circuit breaker gives short circuit protection, serves as disconnect switch. Available in sizes 0 to 5.

Starters with fusible or nonfusible disconnecting switches are available up through size 3.

A-4046

There is an Allis-Chalmers starter for every motor need. Contact your nearby A-C representative or write for selection guide 14B7733, Allis-Chalmers, Milwaukee 1, Wisconsin.

ALLIS-CHALMERS

If you write maker identify as IEN - 1533

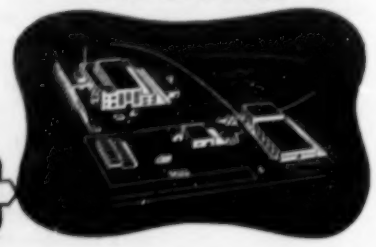
TOPS IN QUALITY, DEPENDABILITY and SERVICE

Experience has proven that you can depend on DICO WHEELS for long lasting, trouble-free service.

Sizes from 6" to 24.5" rubber tire diameters

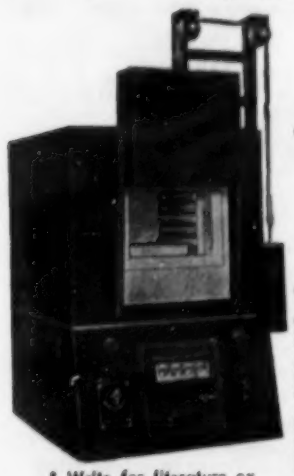
Drop Center and Demountable Rim Pneumatics

Demountable Cushions and Solids — and "Molded-on" types



DICO DES MOINES 5, IOWA

If you write maker identify as IEN - 1534



Designed for TOOL ROOM EFFICIENCY

HUPPERT *Heat Treating* **FURNACES**

Range: 300°F to 2000°F

Years of satisfactory operation in tool, die and machine shops, as well as laboratories have proven these furnaces to be ideal for production work. Huppert special features include High Temperature, Heavy Duty Kanthal elements — Multi-insulation — counterweighted and tight self-sealing door. Pilot lights indicate furnace operation. All connections factory installed, shipped ready for operation.

• Write for literature on complete line of furnaces and ovens.

Model No.	Inside Dimensions			KW	Prices 220 volt single phase	
	Wide	High	Deep		with Huppert input controller	with electronic temperature controller
869	8"	6"	9"	4	$280.00	$480.00
11	8"	6"	12"	4	287.00	487.00
12*	8"	8"	12"	6	367.00	567.00
12A*	8"	8"	18"	9	471.00	671.00

*For 2300° F. add $95.00 to No. 12 and $105.00 to No. 12A. No. 12A can be furnished for 3 phase at no additional cost. For floor model add $50.00 to above prices.

K. H. HUPPERT CO.
6856 Cottage Grove Avenue, Chicago 37, Illinois
Manufacturers of Electric Furnaces and Ovens

If you write maker identify as IEN - 1535

use **AVERY** Kum Kleen **LABELS**

- *REDUCE LABELING COSTS*
- *ELIMINATE WASTE MOTION*
- *SPEED ASSEMBLY OPERATIONS*

Because Avery labels are pressure sensitive, they're the fastest, easiest and most economical labels you can use...for nameplates and trademarks, for guarantees and instructions—for approval seals, diagrams and many, many other uses.

They can be supplied in any size, shape or color...on backing tape in roll or sheet form...to meet your own specific labeling requirements.

With Avery electric dispensers labeling is as much as 5 times faster than with ordinary methods!

You can save time and money by using these labels in YOUR business. Clip the coupon for FREE samples.

AVERY ADHESIVE LABEL CORP., DIV. 103
117 Liberty St., New York 6 — 608 S. Dearborn St., Chicago 5
1616 S. California Ave., Monrovia, Calif. — Offices in Other Principal Cities

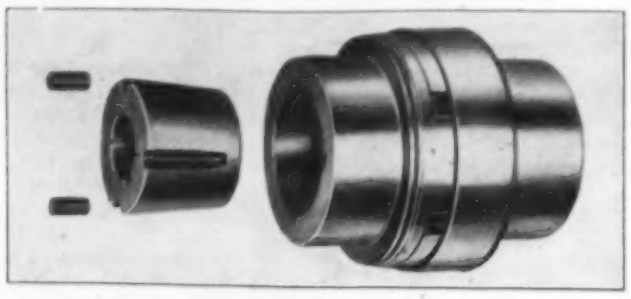
☐ Send us case histories & free samples
☐ Tell us about your dispensers
☐ Have the Avery Label Man call

Name.....
Company.....
Address.....
Our business is:.....

If you write maker identify as IEN - 1536

DRIVE . . Flexible shaft coupling for use with Dodge Taper-Lock bushings

Source: LOVEJOY FLEXIBLE COUPLING CO.
4814 W. Lake St., Dept. IEN, Chicago 44, Ill.



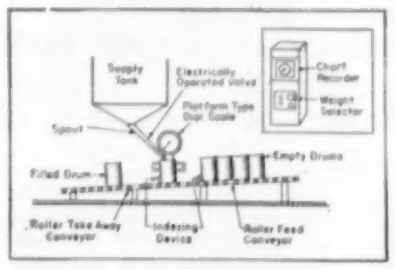
Bushing clamps on shaft

Three sizes of the company's Type-C flexible shaft coupling are now available for use with Dodge Taper-Lock bushings as shown in the illustration. The bushing permits easy assembly on a shaft. A small number of coupling bodies can be taper bored to take the interchangeable bushings for changing shaft diameters. The three sizes accommodate shaft couplings from ½ to 2 in., and from ½ to 2½ inches. The company will continue to stock all sizes of the straight bored couplings in line with previous practice.

If you write maker identify as IEN - 1537

PACKAGING . . Automatic equipment for free flowing materials by weight

Source: RICHARDSON SCALE CO.
Van Houten Ave., Dept. IEN, Clifton, N. J.



Available to order

Empty containers are indexed automatically to the roller equipped weighing platform of this new automatic equipment where a transducer equipped scale accurately cancels out the container weight and actuates a valve that opens delivery into the container from a supply of the material to be packaged. Cut off takes place accurately on reaching a predetermined weight in the container and a printed record is made by the scale mechanism.

The printer or recorder can be located in any convenient position. A combination of alarm and control shuts down the operation if anything goes wrong. Accuracy can be maintained on a tolerance within 0.1 per cent.

If you write maker identify as IEN - 1538

Representatives of some 30 chemical companies were shown the mechanized quality control equipment applied by Hercules Powder Co., 1940 Delaware Trust Bldg., Wilmington 99, Del., in its Mansfield, Mass., plant. The equipment is a combination of strain gage load cells manufactured by Baldwin-Lima-Hamilton Co. and control equipment by Foxboro Co. to solve the problems of weighing and handling and of process control and recording for dependably reproductible results.

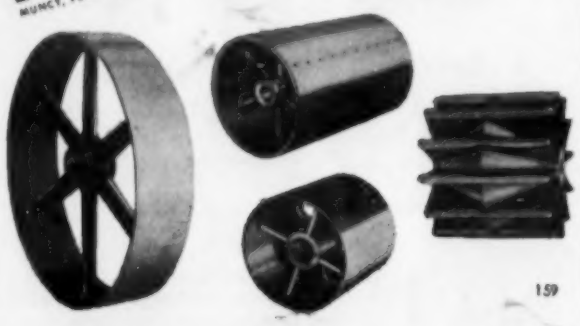
All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 1539

SPROUT WALDRON MUNCY, PENNSYLVANIA

PULLEYS

SOLID FACE and BELT SAVER



159

In handling rough, abrasive materials, S/W exclusive Belt Saver Pulleys are lengthening belt life as much as 400%. Equally well recognized is the S/W Blue Face Pulley Line in standard and made-to-order types and sizes. Write today for literature.

Sprout-Waldron & Co., Inc.,
5 Logan Street, Muncy, Penna.

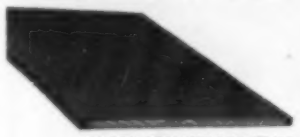
Vertical Mixers, Attrition Mills, Rotary Feeders, Ribbon Type Mixers, Crushers, Knife Cutters, Continuous Mixers, Roller Mills, Separators, Pulleys

SPROUT-WALDRON

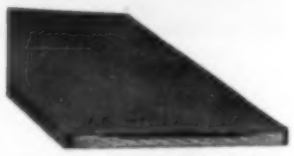
If you write maker identify as IEN - 1540

84 YEARS OF SERVICE

Hamilton Specializes In
HIGH GRADE CONVEYOR BELTING FOR INDUSTRY



SUPER SERVICE CONVEYOR



STEP PLY CONSTRUCTION

Just 2 of the more than a dozen types of Belting made by Hamilton Rubber

Through constant research and improved manufacturing facilities, Hamilton is able to offer you the *precise* Conveyor Belt for your particular service requirement. It is "engineered" to deliver better performance through progress."

Send For Descriptive Folder

HAMILTON
RUBBER MFG. CORP.
Trenton 3, New Jersey

If you write maker identify as IEN - 1541

START of a perfect **FINISH** with *haskins*

FLEXIBLE SHAFT TOOLS

Whether you're finishing a casting, a weld, a fine die or stainless steel surface, you'll get the equipment that will do the job best from the best-known name in flexible shaft equipment—Haskins. Here is a company with a world of finishing experience to offer you—and a line of flexible shaft equipment in which long-life, multiple usefulness and economy have never been sacrificed to price.

R. G. HASKINS COMPANY, 601 S. Washtenaw Ave., Chicago, Ill.

If you write maker identify as IEN - 1542

NEW SEALER HOLDS THEM!

Prevents Leaks . . . Protects Surfaces

This newly-developed polyhydroxylated plastic sealer adheres to any surface. Does not become hard or brittle. Holds at joints under 2,000 lbs. pressure. Use as a protective coating or as a pipe joint compound. Holds these chemicals and many others:

Dries but doesn't harden. Stays flexible.

→ VARSOL
DRIP OIL
CARBON TETRACHLORIDE
→ TRICHLORETHANE
CHLOROBENZENE
ETHYLENE DICHLORIDE
→ TRICHLORETHYLENE
TRICHLOROBENZENE
BENZENE
→ XYLENE
BUTANE
PROPANE
→ HEXANE
PETROLEUM NAPTHA
SILICONE OILS
→ PETROLEUM OIL
TOLUOL
GLYCERINE
→ SULPHUR DIOXIDE

→ WATER
"FREON"
METHYLENE CHLORIDE
→ METHYL CHLORIDE
PERCHLOROETHYLENE
ORTHO-DICHLOROBENZENE
→ CUMENE
CYMENE
GASOLINE
→ JET ENGINE FUELS
FORMALDEHYDE
VEGETABLE OILS
→ KEROSENE
COAL TAR CHEMICALS
PAINT SOLVENTS
→ MOST NON-POLAR SOLVENTS
CHLORINATED SOLVENTS
AROMATIC SOLVENTS
→ AMMONIA

Leak Lock

Comes in 1½ oz. tubes (dozens), pint cans and 10 lb. cans. Order from your supply house. Highside Chemicals Co., 10 Colfax Ave., Clifton, N.J.

1. USE AS A PIPE JOINT COMPOUND . . . .
2. USE AS A PROTECTIVE COATING . . . . .

If you write maker identify as IEN - 1543

Left— Union Special Style 20100 H Bag Closing Machine

Here's how to close **MULTIWALL PAPER BAGS**

FOR lower production costs ...stronger, neater closures ...ability to get out rush orders in a hurry, you can't beat Union Special Bag Closing Machines! Specially built to stand up under heavy production schedules, these machines provide the high output rates needed to meet modern competitive conditions.

In the Union Special line, it's easy to find the right unit to meet your particular requirements. ASK FOR RECOMMENDATIONS.

SEND FOR THIS BULLETIN!

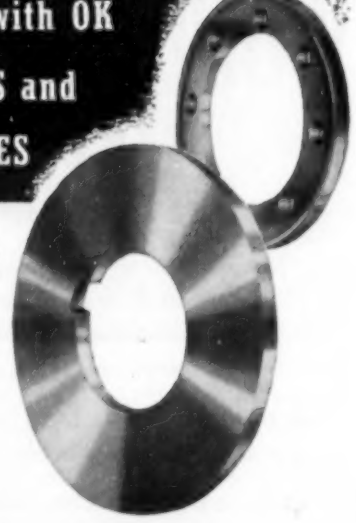
Get your copy of this 16 page illustrated bulletin containing helpful data and charts on the complete Union Special line of bag closing machines. UNION SPECIAL MACHINE CO., 410 North Franklin Street, Chicago 10, Illinois

UNION SPECIAL

If you write maker identify as IEN - 1544

it's OK ...let'er go!

cut costs on your toughest jobs with OK SHEAR BLADES and SLITTER KNIVES



Heat Treating does it. Gives them maximum toughness and keen edge holding qualities. You get longer runs between re-grindings.

OK Battle Axe Shear Blades for shearing up to and including ¼" mild steel or equivalent.

OK Dura-Chrome Shear Blades for shearing hot or cold plate steel up to 1¼" or equivalent.

OK Standard Shear Blades for any type shearing when only short runs or little shearing is done; also for heavy plate shearing.

OK Gang Slitters for slitting steel, precision ground to ± .0002 tolerances.

OK Rotary Shears and Cutters for trimming sheet steel and light plates.

WRITE DEPT. J FOR BULLETIN

Write today giving quantity and sizes.

GO WITH OHIO GREEN

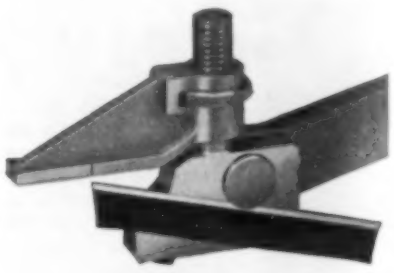
THE OHIO KNIFE CO.

CINCINNATI 23, OHIO

If you write maker identify as IEN - 1546

LATHE TOOLS . . Cutoff holder floats cutter and steady rest on work

Source: NOVI TOOL & MACHINE CO. 25806 Novi Road, Dept. IEN, Novi, Mich.



For general use

New holder pivots a steady rest and a clamp for the cutter on its shank. The shank is secured in the tool post on a standard 10-in. lathe. The steady rest is adjustable and is brought down to ride upon work that is to be cut off. It and the tool float on the work so the tool has no tendency to chatter and cannot dig in. The holder can be adjusted to cut off stock to 2 in. in diameter. It can be employed with power or hand cross feed. It is supplied with a specially designed free cutting blade.

If you write maker identify as IEN - 1547

DRIVE . . Reinforced V-belt employs synthetic fiber cords in body

Source: RAYBESTOS-MANHATTAN INCORPORATED 61 Willett St., Dept. IEN, Passaic, N. J.

Technical data in Folder 6628

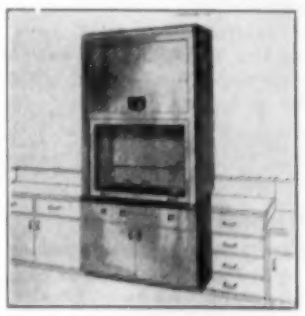
Super-Power trade names new V-belt construction that features straight side walls and straight in-line synthetic fiber reinforcing cords in the body at the neutral axis. The new belt is available in cross sections from A to E. It is rated at an average of 40 per cent above the company's standard V-belt horsepower ratings.

The smallest A section is available in pitch lengths of 27 to 120 in. with list price at $1.30 to $4.60. The largest E-section belt has pitch length from 183.5 to 360 inches. It lists at $42.50 to $83.50.

If you write maker identify as IEN - 1548

FURNITURE . . Unitized fume hood with controls brought out to the front

Source: FISHER SCIENTIFIC CO. 719 Forbes St., Pittsburgh 19, Pa.



For worker protection

The window at the front of this new fume hood need not be opened to adjust air, gas, water, vacuum. The manual controls for these services are brought out to a panel at the front of the cabinet base above the storage compartment. The hood employs a 48 by 30-in. Kemtone top with a chemically resistant finish. Services are deck mounted at the rear of this top. A Duriron cup beneath the faucet is not subject to attack by corrosive chemicals in service.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 1549

CAN YOU REMOVE THIS BROKEN TAP FOR 18¢?

A ½" x 13 broken high speed tap embedded in ¾" Brown & Sharp die stock.

Remains of broken tap after being removed by the Elox M-300 Electron Drill*.

Electrode (tool) used	.290" copper tubing
Set-up Time	60 Seconds
Cutting Time	180 Seconds
Clean-up Time	60 Seconds
	300 Seconds or 5 Minutes
Electrode Cost:	$0.02
Labor Cost:	.15 (@ $1.80 per hour)
Electricity approx.	.01
TOTAL COST:	$0.18

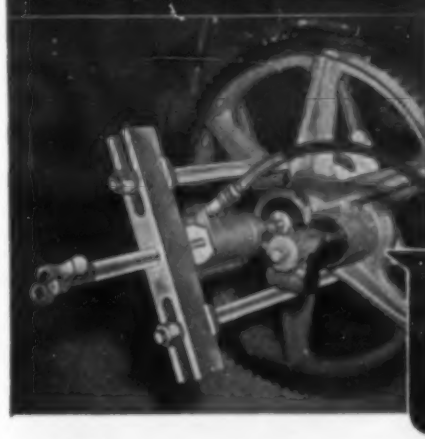
LET US SHOW YOU HOW

elox corporation of michigan *T.M. Reg.

724 N. Rochester Road • Clawson, Michigan

If you write maker identify as IEN - 1550

PUSH . . . PULL 75% FASTER 90% EASIER



WITH THE CENTER HOLE OTC

50 TON HYDRAULIC PULLER

Removes or installs bearings, gears, pinions, shafts, studs, wheels, pulleys, etc.—75% faster and 90% easier. This new OTC 50 ton ram is completely portable (weighs only 45 lbs.)—has remote control pump—interchangeable ram heads—and can be used as a production holding fixture. Also available in 17½ and 30 ton sizes. *Booklet describes complete line and uses of OTC equipment.*

WRITE FOR FREE BOOKLET

OWATONNA TOOL COMPANY

371 CEDAR STREET • OWATONNA, MINN.

If you write maker identify as IEN - 1551

Now a NEW

"Pencil Point" SOLDERING TOOL

FOR SMALL OR MINIATURE WORK

IDEAL **Thermo-Tip**

INSTANT HEAT—

PINPOINT ACCURACY

NOTHING TO HOLD BUT AN ELECTRODE "PENCIL"

Pencil Thin for EASIER, FASTER, SOLDERING of:

- Electronic Circuits and Parts
- Aircraft Connectors
- Pin Type Plugs
- Wire-to-Wire
- Terminals
- Radio and TV Chassis
- Instruments
- Printed Circuits

Tips for Every Small Job

—2 sizes of double carbon, single carbon with ground clamp, double metallic. May also BE USED AS SOLDERING IRON—two sizes of chisel tip irons.

Tips Screw In to Fit the Job

DOUBLE METALLIC

DOUBLE CARBON

Other Tips Available

An all-new production tool that makes small and miniature soldering simpler and surer than ever before. Solders some joints in less than 1 second! . . . Lighter and easier to handle than soldering irons or guns—a woman can use it all day without fatigue! Check this unique combination of features:

GETS INTO SMALL, TIGHT SPOTS because of smaller electrode pencil.

NO HEAT DAMAGE—instant resistance heating makes sound joints before resistors, condensers, printed circuits, terminal fibre, etc., can be damaged. Pinpoints the heat!

NO "COLD FLOW JOINTS" — resistance principle *requires* that metal be heated before the solder will flow. Tap switch adjusts heat.

SAFE—soldering pencil uses harmless (6v) voltage and high amperage from separate step-down transformer.

LESS FIRE HAZARD—electrodes are hot only when in use.

LESS REPLACEMENT COST — only low cost electrodes to buy.

MAIL FOR FURTHER DATA

SOLD THROUGH LEADING DISTRIBUTORS

IDEAL INDUSTRIES, Inc.
1108 Park Avenue, SYCAMORE, ILLINOIS

Please send catalog data on NEW IDEAL THERMO-TIP

NAME.....

COMPANY.....

ADDRESS.....

CITY..... ZONE..... STATE.....

If you write maker identify as IEN - 1553

NEW T-J

Spacemaker

AIR CYLINDERS

Saves up to 40% Space!

Streamlined construction of the new T-J Cylinders *eliminates tie rods . . . reduces head size . . .* and *saves up to 40% in mounting space!* In addition, a new high in strength is achieved with solid steel heads and heavy wall seamless steel body . . . leakproof construction . . . extra high safety factor. Cylinder walls are precision honed and hard chrome plated for long-life efficiency. Available with new T-J Super Cushion Flexible Seals. Many standard sizes and styles . . . cushioned and non-cushioned . . . for pushing, pulling, lifting, clamping or control jobs. Write for bulletin 8152. The Tomkins-Johnson Co., Jackson, Michigan.

37 YEARS EXPERIENCE T-J

TOMKINS-JOHNSON

MOTORS · AIR AND HYDRAULIC CYLINDERS · CUTTERS · SLINGSHOTS

If you write maker identify as IEN - 1554

WILL YOUR PLANT STAND A WHITE GLOVE INSPECTION ?

Model 218

This idea may sound far fetched — but it's straight facts that the clean plant, shop or office will have the best chance of landing defense orders.

Doyle Vac-Its are vital to your defense programs. Write Doyle today. No obligation.

Doyle VACUUM CLEANER CO.

2235 Stevens St., S. W. Grand Rapids 7, Mich.

If you write maker identify as IEN - 1555

FOR THESE *Extras*

LONGER SERVICE

LESS MAINTENANCE

HIGHER PERFORMANCE

use STAINLESS STEEL

FLOATS

YOU can solve virtually all your float problems by standardizing on Stainless Steel Floats from Chicago Float Works. You get longer service and less maintenance because Stainless Steel Floats resist corrosion and withstand high temperatures and pressures. Extreme strength insures them against collapsing and they always respond perfectly to level fluctuations because of permanently high buoyancy. Install our high quality Stainless Steel Floats and be sure of long, dependable operation!

WRITE FOR FREE CATALOG

This illustrated catalog gives complete details on sizes, shapes, spud connections, and engineering data on Chicago's complete line of standard or special floats.

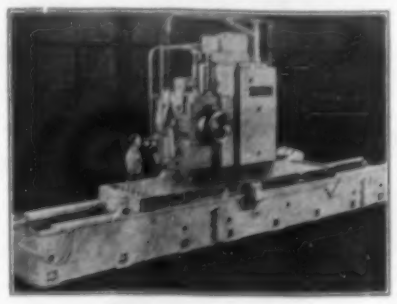
CHICAGO FLOAT WORKS

2226 S. Western Avenue • Chicago 8, Illinois

If you write maker identify as IEN - 1556

MILLING . . Planer type machine for heavy duty work as on die blocks

Source: SUNDSTRAND MACHINE TOOL CO.
2531 - 11th St., Dept. IEN, Rockford, Ill.



Push button control

Model 77 is a new design of the company's Rigidmil. It employs a 60, 75 or 100-hp. motor to drive the spindle and mounts a 48-in. table with feed stroke to 144, 168, 192 and 216 inches. The machine is designed particularly for heavy die block milling prior to cutting impressions or for removal of old impressions prior to recutting.

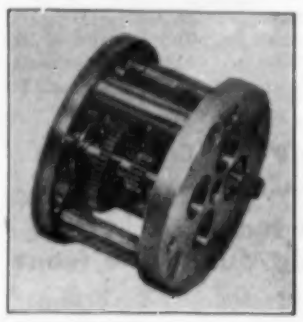
Vertical feed for the head operates in combination with longitudinal table feed so an automatic square cycle can be set up. A scale attached to the vertical head, and an adjustable pointer on the bed, check the automatic cycle or are used in connection with manual operation.

Variable feed drive is provided for longitudinal and vertical movements with meters in the pendent control unit to indicate the rate of feed. A meter on the control panel, in addition to these two, indicates the per cent of full load current on the spindle motor.

If you write maker identify as IEN - 1557

DRIVE . . Miniature speed reducer, 300 to 1 ratio for servo motor duty

Source: BELOCK INSTRUMENT CORP.
111-01 14th Ave., Dept. IEN, College Point 56, N. Y.



About full size

Cluster gears, integrally cut, minimize backlash in this new miniature speed reducer. The gear shafts are mounted in ball bearings. The assembly can be supplied with any potentiometer having a ⅛-in. shaft, to form a packaged miniature servo assembly. It takes a standard miniature servo motor and is designed to operate on a standard 28-volt dc. aircraft input supply. It also is available for 18-volt dc. supply.

Output torque is 8 in. oz. with starting input at 1.5 volts. Maximum backlash is 0.007 in. at the input side. Operation can be maintained in temperatures from minus 65 to plus 125 deg. C. Life expectancy is 2,000 hr. under normal conditions. All parts are made of stainless steel.

If you write maker identify as IEN - 1558

Griptex No. 204 is an oil resistant liquid synthetic rubber coating for application by brush or spray on new or old conveyor belts. The material is self-vulcanizing and forms a tough flexible coating on the belt surfaces. It is available in a neutral shade and in colors from Adhesive Products Corp., 1660 Boone Ave., Dept. IEN, New York 60, N. Y.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 1559

FOR HEAT IN A HURRY!

Delta's

Direct-Fired

OIL UNIT HEATER

OVER 52 INDUSTRIAL AND COMMERCIAL APPLICATIONS

- COMPLETELY SELF-CONTAINED — No high-draft permanent chimney needed — no boilers, traps, ducts or pumps.
- TREMENDOUS EFFICIENCY — Output 220,000 BTU/hr. No heat wasted on walls or ceiling — no overheating.
- VERSATILITY — Suspends overhead or mounts on dollies for portable spot heating. Becomes an effective ventilator, humidifier and summer air circulator.
- GREAT ECONOMY — Powerful GUN-TYPE burner uses inexpensive fuel oil. Factory wired and assembled for money-saving installation.

DELTA HEATING CORPORATION
TRENTON 8, NEW JERSEY

WRITE, WIRE, PHONE FOR MORE DETAILS
In Canada - Kresno-Stamm
Montreal 24, Quebec

If you write maker identify as IEN - 1560

You get a *Complete Package* with a

RIVETT Power Unit!

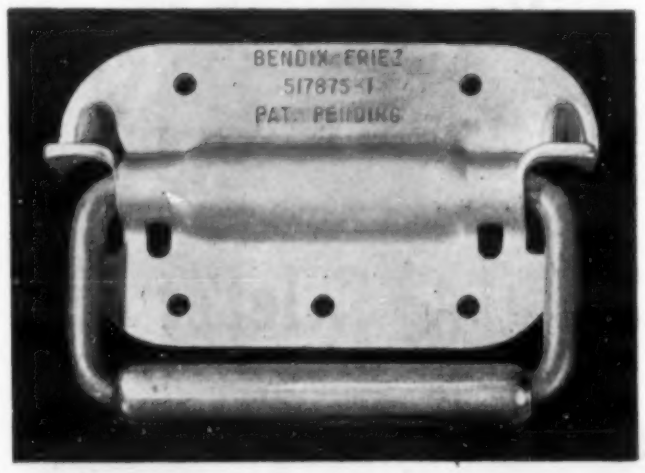
Rivett offers the Series 9100 Power Unit as the ideal source of power for your hydraulic circuit. The unit is equipped with pump, relief valve, oil filter, pressure gauge, and all equipment necessary to furnish a steady flow of oil at continuous working pressures up to 1000 P.S.I. Reservoir is available in 5 tank sizes, with pump capacities from .4 G.P.M. to 40 G.P.M. Motor mounting may be arranged for any standard frame. Series 9200 with double pumps are supplied for two separate circuits of different pressures.

Write for Catalog showing specifications and description of Rivett Hydraulic Power Units.

RIVETT LATHE & GRINDER INC.

Brighton 35, Boston, Mass., Department IEN-2

If you write maker identify as IEN - 1561



WONDERFUL NEW HANDLE

. . . if you sell or ship anything that has to be lifted, this is for you. It meets military requirements for many specialized equipment uses. Count its advantages in the specs below.

This patented Bendix-Friez handle is rust-proof . . rattle-proof and withstands shock and vibration.

It has a positive "snap-back" principle.

Built of stainless steel and aluminum, it can be riveted or welded to any kind of container or depressed in the sides.

What's a large instrument manufacturer doing making handles? We couldn't seem to find one for our own use that pleased us . . . so we made one ourselves.

Manufacturers who saw it and needed a better handle liked it. If you've got something that's got to be lifted by handles . . . chances are this Bendix-Friez handle is for you. Small or large quantity orders. Inquiries answered promptly.

BENDIX FRIEZ

FRIEZ INSTRUMENT
Division of
Bendix
AVIATION CORPORATION
1428 Taylor Ave., Balto. 4, Md.

EXPORT SALES
Bendix International Division
205 E.42nd St., New York 17, N.Y.U.S.A.

If you write maker identify as IEN-1563

ONLY

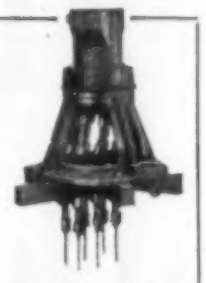
THRIFTMASTER *Universal Joint Type* **DRILL HEADS**

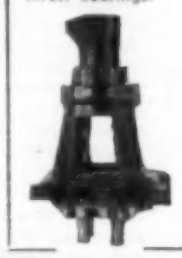
have these exclusive* features

6 Standard Models
Models U-608 and U-1000—Ball Bearing
Models U-620B and U-1012B—Plain Bearings, 11/16" or ½" min. centers.
Models U-608-BS and U-1000-BS—Ball Bearing Gear Case, Plain Spindles

Semi-Standard Heavy Duty Full Ball Bearing
½" in Cast Iron—17/16" min. centers 7⅛" or 9⅜" dia.
½" in Steel—1 13/16" min. centers 7" or 9⅝" Dia.
Also Larger Adaptations and Full Line of Fixed Center Drill Heads.

• Standard Full Ball Bearing Construction, including Spindles.
Driving assembly in *Full Ball Bearing* mounted with 3 Bearings on each spindle. Thrust load carried by radial thrust bearings.





• Standard Slip-On and Slip-Off Template Construction
For accurate setting and locating spindle brackets are machined to receive slip-on and slip-off template.

WRITE FOR FULL INFORMATION

THRIFTMASTER *Products Corporation*
Subsidiary of Thomson Industries, Inc.
1040 N. Plum Street, Lancaster, Penna.
Also Makers of
DORMAN AUTOMATIC REVERSE TAPPERS

If you write maker identify as IEN-1564

New... **A Measurable, Economical, Simple Method of Applying**

V.P.I.* VAPOR PHASE INHIBITOR

MORE EFFICIENT
•
ELIMINATES GUESSING
•
SAVES COSTLY WRAPPING
•
NO MORE DEGREASING
•
IMMEDIATELY EFFECTIVE
•

***The Only* RUST PREVENTIVE OFFERING METERED APPLICATION!**

Kerpro V.P.I. is a measured solution of Shell Development Company's vapor phase inhibitor, packed in a convenient, pressurized dispenser...*the only method by which metered application is assured.* A ten-second spray delivers one gram of V.P.I. sufficient to protect a minimum of one cubic foot of space for at least one year. Because *Kerpro* V.P.I. immediately saturates the air in containers, tool cribs, precision instrument cabinets, etc., protection is not dependent upon crystal evaporation... rust protection is *sure* and *immediate.*

SAVES TIME, MONEY & MAN HOURS

Get all the facts on *Kerpro* V.P.I. Rust Preventive. Learn how it saves you real money in wrapping and crating...saves your customers degreasing costs and yet gives your products *positive, measured rust protection.* Your inquiry entails no obligation.

•

Send Coupon With Your Letterhead

kerpro VPI VAPOR PHASE INHIBITOR

ROBERT J. KERR CHEMICALS, INC.
Successors to Protective Coatings Corp.
9 South Fairview Avenue, Park Ridge, Illinois

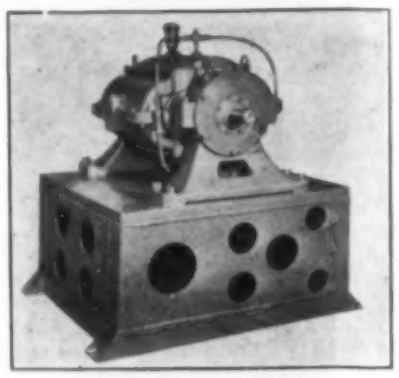
* V.P.I. a Shell Development Co. Product

ROBERT J. KERR CHEMICALS, INC., Dept. IN 1
9 S. Fairview Ave., Park Ridge, Ill.
Please send us 12 oz. test sample of Kerpro V.P.I.
☐ Bill us $2.25 on open account. ☐ Remittance enclosed.
☐ Send full details and quantity discounts.

If you write maker identify as IEN-1566

TESTING . . Trunnioned gear box for application with a dynamometer

Source: UNIVERSAL GEAR CORP.
1452 E. 19th St., Dept. IEN, Indianapolis 7, Ind.



Built to order

Input and output shafts are concentric and the housing of this new gear box is mounted in **trunnions** as shown in the illustration. The trunnion bearings are roller type for high torque applications. They are hydrostatic, with an independent oil supply, for high speed applications. In the latter case, a pump supplies oil pressure to 1,000 pounds.

Speed range is 1,750 to 60,000 rpm. and rating is to 800 hp. Gear ratio ranges from 1 to 20 to 1. The housing attaches to a dynamometer housing, or a gear box torque arm is employed.

If you write maker identify as IEN-1567

VENTILATING . . Fabric duct, wire reinforced, flexible, retractible

Source: FLEXHAUST COMPANY
100 Park Ave., Dept. IEN, New York 17, N. Y.

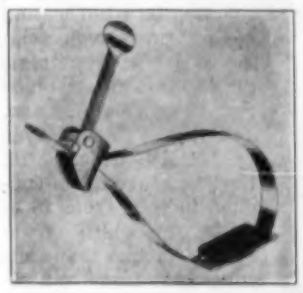
Specifications upon request

Cotton Drill is neoprene impregnated and formed into a tube around a spiral wire reinforcement in the Flexaust Type CWS duct. The new construction replaces the former type CWL and is recommended for low pressure or suction service where warm or cold air or light dust is to be moved. Standard sizes range from 1¼ to 8 in. in inside diameter.

If you write maker identify as IEN-1568

SEALING . . Pipe clamp kit applies patch to close leak in pipe

Source: MARMAN PRODUCTS CO.
Box 12425, Dept. IEN, Los Angeles 64, Calif.



About $3 per kit

The company announces availability of a new repair kit in a transparent plastic bag for emergency pipe repair. The kit contains three 13-in. stainless steel clamps, previously described IEN-4019-47. This particular size applies over pipe to 3⅝ in. in outside diameter or over hose or a split timber in the same size range.

The band carries a flexible steel-backed pad made of oil resistant non-metallic material known as Perbunan. This material is resistant to attack by gas, oil, water or gasoline. Ten kits are packaged in a box.

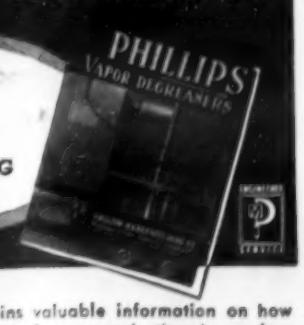
All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . *See Page 50*

If you write maker identify as IEN-1569

PHILLIPS

LEARN HOW VAPOR DEGREASING CAN CUT COSTS AND INCREASE YOUR PRODUCTION

SEND FOR YOUR FREE COPY OF PHILLIPS' NEW DEGREASING BULLETIN



HERE's a new bulletin that contains valuable information on how modern vapor degreasing speeds up production in modern factories by making metal cleaning operations faster and more economical. Listed below are some of the features of this new book:

WHAT DEGREASING IS — A full description of what vapor degreasing is and what it will accomplish for you.

HOW DEGREASERS WORK — A series of photographs and written description shows what happens in the degreasing process.

DEGREASER APPLICATIONS — Illustrates number of different applications of degreasers to solve metal cleaning problems in various industries.

COMPLETE LINE OF STANDARD DEGREASERS — Describes Phillips' full line of standard equipment, including batch type, combination, rotomatic, and conveyorized models.

SPECIALLY ENGINEERED UNITS — Tells about Phillips' service in designing special degreasing units for solving unique metal cleaning problems.

Phillips 3461 Touhy Avenue • Chicago 45, Illinois
MANUFACTURING COMPANY
Engineered Metal Cleaning Equipment

If you write maker identify as IEN-1570

3 VALUES!

★ One Piece Construction
★ Wide Wire Range
★ Economically Priced

BLACKBURN *Hi-Strength* **TERMINAL LUGS**

Strongly constructed—all in one piece—yet small and compact, to fit in tight quarters. UL approved. Only 6 sizes cover a range from No. 14 to 1,000,000 CM. Specify Blackburn and get a quality lug in the low price field.

JASPER BLACKBURN CORP.
35 Madison St., St. Louis 6, Mo., CEntral 3007

If you write maker identify as IEN-1571

NEW! Orbital Air Sander for fast material removal...

SUNDSTRAND

With speeds up to 6000 cycles per minute, this new, single-pad, fast-action Sundstrand Orbital Air Sander is ideal for rough sanding and preliminary operations, preparatory to finer finishing. Unique pad control permits sanding up to edges, moldings and into tight corners, completely eliminating hand sanding. It weighs just 4½ lbs., fits snugly into the hand, has counterbalanced parts to minimize fatiguing vibration. Palm lever operates both air and water, for wet sanding, by slight downward pressure. Air consumption is low, requiring only 5½ to 7 cubic feet per minute. If you have a sanding problem requiring *fast material removal*, see your supplier for a demonstration of Sundstrand's new Orbital Sander. *For finer finishes*, ask about Sundstrand Straight-line Sanders.

SUNDSTRAND MACHINE TOOL CO. • Pneumatic Division, Rockford, Illinois

SUNDSTRAND

A name to remember in **AIR SANDERS**

If you write maker identify as IEN-1572

Add an Acme Steel 25-pound coil holder

to your present wire stitching equipment

Stitch 2½ times longer without stopping

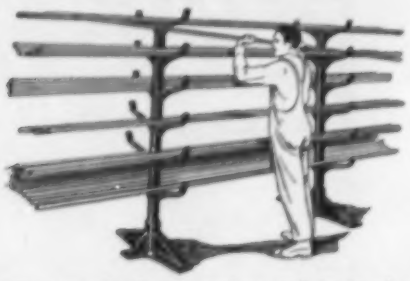
The rugged new Acme Steel 25-pound coil holder means less down time on your wire stitching operations, both because it holds 2½ times as much wire as the conventional 10-pound coil holder, and because it's easier and faster to load. Features are tangle-free wire feed and positive shoe-type brake. For details, write Acme Steel Products Division, Dept. IEN-24, Acme Steel Company, 2840 Archer Avenue, Chicago 8, Illinois.

STITCH IT...STRAP IT...SHIP IT...SAFELY!

ACME STEEL

If you write maker identify as IEN - 1573

for EFFICIENT HANDLING and ORDERLY STORAGE



You save time, both in storing and in issuing, when you use Brown Sectional Racks. Open sides speed handling. Complete visibility permits quick selection to save waiting mechanics time.

Maximum flexibility in arrangement is possible because each Brown Rack is independent and self-contained, need not be bolted to floor. Easily relocated. Systemized storage with Brown Racks promotes good housekeeping, cleanliness.

All iron and steel construction, can't burn, bend, sag or warp. Never wear out.

Get these values now! Write for complete specifications and prices on wide range of models and sizes. Brown Engineering Co., 122 N. Third St., Reading, Pa.

BROWN QUICK-SERVE RACKS

If you write maker identify as IEN - 1574

in just 3 seconds

...you can read any surface temperature in your plant...accurately and easily . . . with the Alnor Portable Pyrocon.

Compact in size, complete in precision design and workmanship, this rugged instrument assures the highest standards of speed, accuracy and dependability. You can take temperature readings on materials in process, the finished product or the heated equipment itself—in as few as 3 seconds!

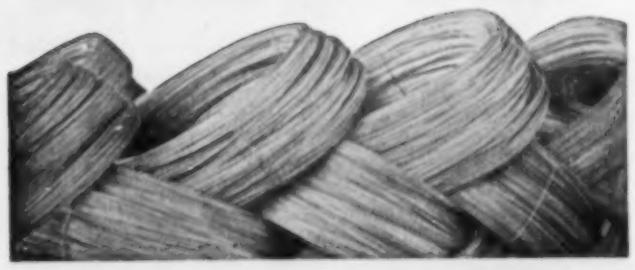
Alnor Portable Pyrocons come in scale ranges to 2000° F., with thermocouples for every application. You'll find full details on the Pyrocon exactly suited to your operations in Bulletin 4257. Send for your copy now. Write: Illinois Testing Laboratories, Inc., Room 517, 420 N. LaSalle St., Chicago 10, Ill.

Alnor PRECISION INSTRUMENTS FOR EVERY INDUSTRY

If you write maker identify as IEN - 1575

PRODUCT-PROVED WIRE

CONTINENTAL STEEL CORP. STEEL CONTINENTAL WIRE KOKOMO, IND.



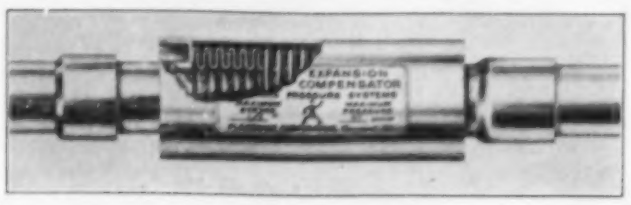
● The worth of Continental wire has been *proved* in the products of hundreds of leading manufacturers. Continental wire is uniform in temper, uniform in coating. Whether your need is for a rust-resistant wire that can stand up under difficult forming operations . . . or for a shaped wire to provide smarter-looking, longer-lasting trim . . . Continental wire can help you build a better, more profitable product. Write Continental at Kokomo.

CONTINENTAL STEEL CORPORATION

If you write maker identify as IEN - 1576

PIPE FITTING . . Expansion joint for use in steam and water heating lines

Source: FLEXONICS CORPORATION
1333 S. Third Ave., Dept. IEN, Maywood, Ill.



For supply and return lines

Four diameters, between ¾ and 2 in., are available in this new Flexon Expansion Compensator. It consists of a bronze bellows protected by a floating brass shroud with connection ends for sweat fitting into a pipe line. One unit will absorb expansion for 30 ft. of copper tube or 50 ft. of steel pipe.

The construction is suited for pressure to 60 pounds and temperature to 250 deg. F. Installation calls for suitable guiding and support of the pipe line adjacent to each end of the new expansion joint.

If you write maker identify as IEN - 1577

CHUCK . . Floating holder for drills, reamers, counterbores

Source: BARNABY MFG. CO.
74 Knowlton St., Dept. IEN, Bridgeport 8, Conn.

Standard key chuck

The chuck in this new floating holder is mounted on a flange that mates with a second flange integral with the straight shank. Cap screws hold the two flanges together. Clearance in the chuck flange holes permit lateral movement of the chuck to align the tool it is holding. Eight sizes range from ½ to 2 in. in shank diameter. List price is $14.50 to $26.

If you write maker identify as IEN - 1578

Storm windows can be made and installed in a hurry, and at comparatively low cost, by employing the screen reinforced transparent plastic sheet material made by Arvey Corporation, 3462 No. Kimball Ave., Dept. IEN, Chicago 18, Ill. The material is supplied in rolls from 28 to 48 in. in width. It is made of tough transparent plastic fused to a reinforcing mesh of cotton, plastic or wire in eight different types. Two of the trade names are R-V-Lite and Vimlite. The material is cut to size with ordinary scissors to nail on light weight wood frames.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 1579

Mutual LP-GAS TORCH & FURNACE

FASTER, CLEANER, SAFER AND CHEAPER THAN GASOLINE OR KEROSENE

Light a match and—POOF—you're in business. No waiting, no pumping or priming. For every heating and melting need Mutual LP-Gas (Propane) furnaces and torches will save you many hours and dollars in labor cost.

No messy fuel, no smoke or odor. Fast and economical. Furnace melts 60 pounds of lead in 12 minutes. Light weight, won't blow out and won't tip over. Torch develops 2400°F. Thousands in daily use. Fuel available everywhere.

Plumbers and repairmen—don't miss this. Send today for free catalog on Mutual's complete line.

No. 2 Furnace

No. 5 Torch

Mutual LIQUID GAS EQUIPMENT CO., Inc.
3606 WEST IMPERIAL BLVD. • INGLEWOOD, CALIFORNIA

If you write maker identify as IEN - 1580

CAN'T BEAT IT!

NEW - DIFFERENT LOADBINDER

LOOK! One handle assembly does the work of two conventional loadbinders. Each Laughlin loadbinder takes 4 sizes of clevis grab hooks. Use correct size hook to fit chain without nicking or slipping. Cut your inventory, insure long wear and safety. Unique design keeps jaws from spreading. Available in 2 sizes for ¼" to ⅝" chain. Drop forged and heat treated.

Available now from your industrial distributor. Write for 4-page folder with full details and user's comments.

LAUGHLIN
THE THOMAS LAUGHLIN CO.
21 Fore street Portland, Maine

If you write maker identify as IEN - 1581

motor design problem?

...maybe one of these **REULAND** *"specials" will solve it!*

FLUID-SHAFT MOTOR

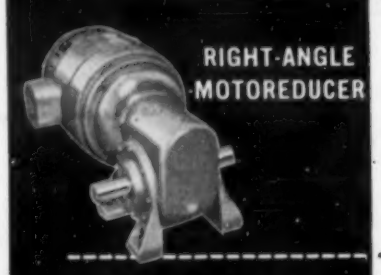
(Cutaway View)

Motor with *internal* fluid coupling. Provides smooth load acceleration. More compact than separate motor and coupling. *Assures perfect alignment.* Will start heavier loads than standard motors of same horsepower. Used on cranes, conveyors, etc.

FLUID-SHAFT MOTOREDUCER

Consists of Reuland Fluid-Shaft motor and gear reducer as one compact unit. Converts the motor's conventional high speed into a slow speed, high torque output. Provides smooth starts. Prevents equipment jamming. Used on cranes, hoists, car pullers, etc.

RIGHT-ANGLE MOTOREDUCER



Consists of Reuland motor and worm gear reducer. Provides unlimited mounting versatility. Permits use of 1 high speed and 2 slow speed power-take-offs, if desired. Ideal for designing into cramped quarters. Also available with Fluid-Shaft drive motor.

THROUGH-SHAFT MAGNETIC BRAKE

"Doughnut" type design allows extension of shaft entirely through brake. Permits use of TWO output shafts per motor. Can be mounted on the input or output shafts (or both) of Fluid-Shaft motors and motoreducers. Only 6 major parts...self adjusting... half usual length.

OVER 600 SPECIAL ELECTRIC MOTOR DESIGNS

Whatever your drive problems may be, there is a good chance that the Reuland "library of specials" contains a unit that is already tailored to your needs. Its availability will save development work and put you in production faster.

Write today, outlining your particular problem. No obligation, of course.

REULAND ELECTRIC COMPANY

WESTERN DIVISION—Alhambra, Calif. • **EASTERN DIVISION**—Howell, Mich.

DISTRIBUTORS IN ALL PRINCIPAL CITIES

If you write maker identify as **IEN-1583**

NEW MINIATURE PRECISION HYDRAULIC VALVE

Skinner's new V10 Series Miniature Hydraulic Valve is an amazingly compact unit, capable of handling pressures up to 1000 P.S.I.

This precision-made valve is ideally fitted for use in the automatic operation of single and double acting hydraulic cylinders, and in pilot control of larger three and four way hydraulic valves.

The V10's construction is consistent with the Skinner quality tradition: most internal parts are of stainless steel; the slide mechanism has a precision-ground piston, and a bore honed to extremely close tolerance, thus minimizing leakage.

Specifications: 1/8" NPT threaded ports; effective orifice diameter of 3/32"; available in the full range of AC and DC voltages.

The economical design and unusually small size of the Skinner Miniature Hydraulic V10 valve will enable many manufacturers to install it in places where, heretofore, remote control devices have been considered impractical. *Write for Bulletin #529.*

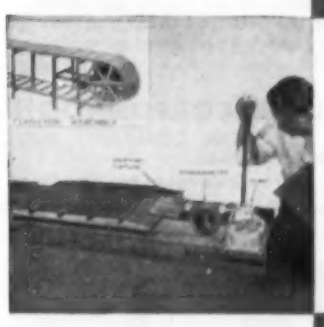
Skinner ELECTRIC VALVE DIV.
THE SKINNER CHUCK COMPANY
110 Edgewood Ave., New Britain, Conn.

If you write maker identify as **IEN-1584**

to measure *tension, traction or weight* do it accurately with DILLON DYNAMOMETERS!

COST IS NEGLIGIBLE

Rugged, compact, accurate; DILLON DYNAMOMETERS are simple and easy to handle and read.



From simple weighing to intricate torque tests, the DILLON DYNAMOMETER is doing the job with the same unfailing accuracy, versatility and rugged dependability which has made it a "by-word" in industry throughout the world. Your own plant becomes your testing laboratory with a DILLON DYNAMOMETER.

Built to take years of hard, daily use, the DILLON will pay for itself many times over.

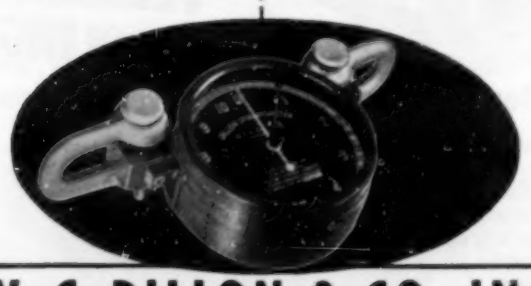
Light: 8 lbs. 4 ozs. (5" dial model.)

Compact: 8¼" long, 6¼" high, 3" thick.

Accurate: Calibrated in Certified Laboratory Testing Machine.

The DILLON DYNAMOMETER is made in 9 different capacities: 0-500 lbs. up to 0-100,000 lbs. All have max. hand, shackles, safety glass crystal. There are thousands in use today by leading companies all over the world. Write for profusely illustrated Bulletin D-1.

SALES REPRESENTATIVES: SOME TERRITORIES OPEN, WRITE

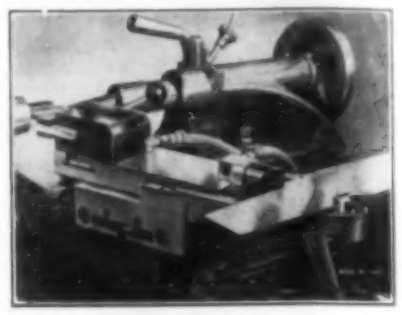


W. C. DILLON & CO., INC.
Precision Instruments for Precision Testing
14620K KESWICK ST., VAN NUYS (Suburb of Los Angeles), CALIF.

If you write maker identify as **IEN-1586**

LATHE TOOLS . . Tracer attachment for contour work on an engine lathe

Source: LEHIGH FOUNDRIES INC.
1500 Lehigh Drive, Dept. IEN, Easton, Pa.



Good for short runs

Model M-1500 designates a larger size, for lathes swinging 16 to 24 inches, of its Model EL-1100 unit, previously described IEN-6977-53.

A ball bearing slide head carries a single point cutting tool. The head is secured solidly by an anchor bolt to the compound lathe rest in place of the lathe's regular tool post. A finger, at the rear of the slide, contacts a template made of ¼ by 2-in. steel strip. The template, in turn, is backed up by a slide head secured to the attachment head, stationary with reference to this head.

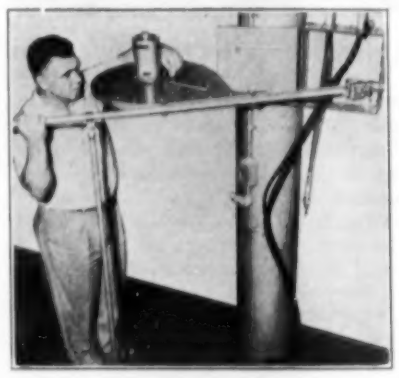
The template is anchored in an adjustable bracket back of the tail stock on the lathe bed. It can be cut to produce a required contour on the work as the carriage moves along the bed. Also, with the template secured at right angles to the bed, contour facing can be performed. Successful test runs, involving ⅜-in. cut-depth with 0.03-in. feed, were taken on Nitralloy bar stock.

Stroke is 4 in. permitting diameter changes of 8 in. to be turned on a lathe. Shoulders can be turned at 90 deg. externally or internally. Internal or external threading can be done with a single point tool. Tool retraction is air operated so threads can be cut to a shoulder without tool breakage.

If you write maker identify as **IEN-1587**

PULLING . . Motor driven unit pulls wire into ¾ to 2 in. conduit

Source: BARTH CORPORATION
12650 Brookpark Road, Dept. IEN, Cleveland 29, Ohio



Electrician's labor saver

Powered Cable Puller, Model CP-1000, is a new assembly of motor driven tape reel, support column, flexible conduit lead, wheel equipped guide brackets and a ¼ by 0.060-in. steel pulling tape. The universal motor connects through an extension cord, supplied for the purpose, to a 110-volt circuit. It is operated to push the tape into a conduit at 25 fpm. and then to pull the wire back at 15 fpm. based on a pulling capacity of 1,200 pounds.

The tape can be pushed for a distance of 175 feet through conduit containing as many as five 90-deg. bends. The guide brackets attach directly to the conduit so no strain is applied to the box or wall. Weight without the brackets is 65 pounds. List price is $469. Overall dimensions are 20 by 25 by 8 inches.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as **IEN-1588**

PRECISION INTERNAL FORMING TO MEET PRODUCTION DEMANDS

QUICK ADJUSTMENT AND POSITIVE ACTION make the MAX-WELL-MADE Model JF recessing tools especially suitable for use in today's high-speed production schedules.

This tool operates on any jig and fixture setup to cut snap ring grooves, "O" ring grooves and oil labyrinths as well as for inaccessible spot facing, external necking, precision undercutting, etc.

Accurate to within ±0.001-inch, Model JF is available in five sizes to pilot into standard bushings from 1" to 2¼ inches.

JF tools can be supplied with either standard Morse or adjustable adapter, quick-change, straight or special shanks.

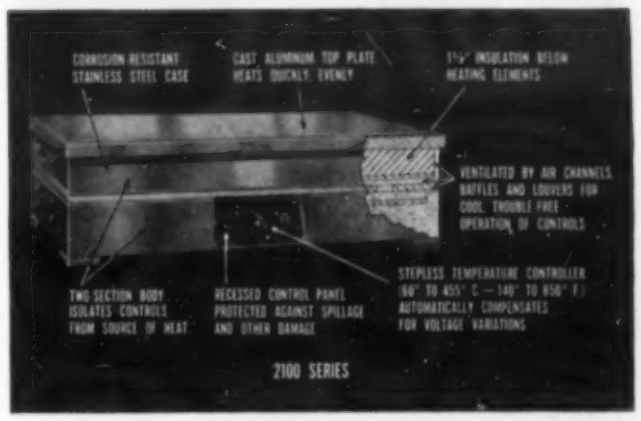
Write today for catalog. (Model JF)

SRG-MC

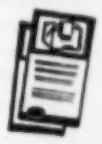
THE MAXWELL COMPANY
391 BROADWAY • BEDFORD, OHIO

If you write maker identify as **IEN-1589**

CLOSELY CONTROLLED HEATING . . . with fast-heating, versatile TEMCO Hot Plates for boiling, evaporations, etc.



Here's the Hot Plate that processes your work precisely! Completely variable regulation of temperature between 60° and 455° C. (140° to 850° F.). Built-in controls hold temperature to extremely close limits, without variations due to line voltage changes. Economical to operate . . . current is "on" only half of the time to hold 260° C. (500° F.). Scientifically designed throughout to meet strict functional requirements. Two sizes: 12" x 12", 1300 Watts, and 12" x 24", 2600 Watts . . . both 7" high. $65 and $85. Write for literature and name of nearest dealer.



TEMCO HOT PLATES
THERMO ELECTRIC MFG. CO. • 482 HUFF STREET, DUBUQUE, IOWA

If you write maker identify as **IEN-1590**

Automatic Liquid Proportioner

Are you feeding one liquid into another on a fixed percentage basis? If so, why not do it both automatically — and economically?

This Rockwood Eductor, used in fire fighting for automatically introducing 3 parts of Rockwood FOAM into 97 parts of water, can also be used for many other purposes. It is "tapped" into the line containing the basic liquid. Then it automatically introduces the other liquid into the line at a predetermined rate. Excellent for dust control and many other uses.

Send us your particular liquid-proportioning problem and Rockwood engineers will gladly show you whether the Rockwood Eductor can automatically solve it for you.

ROCKWOOD SPRINKLER COMPANY
Engineers Water . . . to Cut Fire Losses
Portable Fire Protection Division
40 HARLOW STREET, WORCESTER, MASS.

If you write maker identify as **IEN-1591**

metso saves JUMPERS, UNIFORMS . . .

Launder them with Metso Detergent and they will last longer. Tensile strength tests prove Metso is kind to fibres. Each load from the washwheel is clean and bright because Metso's balanced silica components help soap to remove more dirt. A sample of Metso and handbook of useful data on laundry practice mailed free.

Philadelphia Quartz Company
1131 Public Ledger Building, Phila. 6, Pa.

Metso® Detergents

Efficient Metso Silicated Detergents used in dozens of other industrial cleaning operations.

If you write maker identify as IEN-1592

Meet every test in copper line service

JENKINS Solder-End VALVES

SEND FOR THIS NEW FOLDER

Easy to install — accurate fit to tubing

Positive control — will not distort under intense heat of soldering

Lasting economy — designed with an extra measure of endurance to withstand unusual strain in operation

Describes complete line of Jenkins Solder End Valves, gives dimensions, and instructions for installation. Ask your Jenkins Distributor for Form 198, or write for your copy today. Jenkins Bros., 100 Park Ave., New York 17.

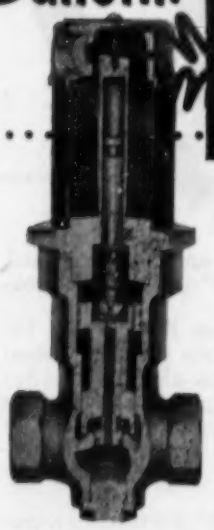
LOOK FOR THIS DIAMOND MARK

JENKINS VALVES SINCE 1864

If you write maker identify as IEN-1593

free Bulletin

Atkomatic SOLENOID **ELECTRIC VALVES**



- Designed for Automatic or Remote Control for operating pressures up to 3,000 psi.
- Full-ported, packless, sturdy, dependable, tight closing.
- Adjustable timing on closing stroke to 300 psi. Eliminates shock on supply lines.
- Handles all media not harmful to bronze. Explosion-proof coil housings available for use in hazardous atmospheres.
- Easily maintained, all parts accessible without removing valve from line.

Write for more complete information

Atkomatic SOLENOID **ELECTRIC VALVES**

ATKOMATIC VALVE COMPANY
545-A ABBOTT STREET • INDIANAPOLIS 25, INDIANA

If you write maker identify as IEN-1594

When You Buy a BURGESS-MANNING *Acousti-Booth* You Buy a 50%* Reduction in Noise

When you invest in a Burgess-Manning Acousti-Booth you are purchasing better communications for your office or plant. Good hearing means fewer errors . . . more work accomplished.

Burgess-Manning booths are pleasing in appearance . . . easy to clean and maintain.

Model 601 Wall Booth of wood construction.

Model 210 Floor Booth of wood construction.

Write for Bulletin A 124

* *Results of studies by a prominent research organization.*

BURGESS-MANNING COMPANY
Architectural Products Division
5970-A Northwest Highway, Chicago 31, Illinois

If you write maker identify as IEN-1595

TUBE . . Teflon thinwall extruded is chemically and electrically inert

Source: HALOGEN INSULATOR & SEAL CORP.
10121 Franklin Ave., Dept. IEN, Franklin Park, Ill.

Catalog T-2000

Blue-Line designates the company's new thin wall extruded Teflon tube. It can be employed to handle corrosive fluids and gases, as electrical insulation, as a protective covering, and as stock from which small parts can be machined. Nominal inside diameter ranges from 0.034 to 0.340 in. for electrical use. Dielectric strength ranges from 4,500 to 40,000 volts on short time test.

Stock sizes, for tubing uses, is 0.170 to 0.437 in nominal inside diameter. Burst pressure at 70 deg. F. ranges from 325 to 1,200 pounds. Other sizes are available to specification, both larger and smaller than those named.

The company is also prepared to supply a line of connection fittings. Minimum length, in any one size, is 12 inches. A permanent blue line identification is extruded integral with the tube. This gives the tube its trade name.

If you write maker identify as IEN-1596

FIRST AID . . Adhesive bandage for knuckles, fingers, elbows, heels

Source: E. D. BULLARD COMPANY
275 Eighth St., Dept. IEN, San Francisco 3, Calif.

Standard in Bullard first aid kits

Knuckle-Band is a new elastic adhesive bandage measuring 3 in. in length by 1½ in. in width. It has two U-shaped cutouts as shown in the illustration. To the right is a 1 by 1½ in. sterile gauze dressing. The new unit provides freedom of movement without bunching. It will fit over a thumb or finger tip. The adhesive leaves no mark on the skin and is easily removed. It is non-irritating. The new bandage is available in unit packs of 8 or 16 and in boxes of 50 and 100.

If you write maker identify as IEN-1597

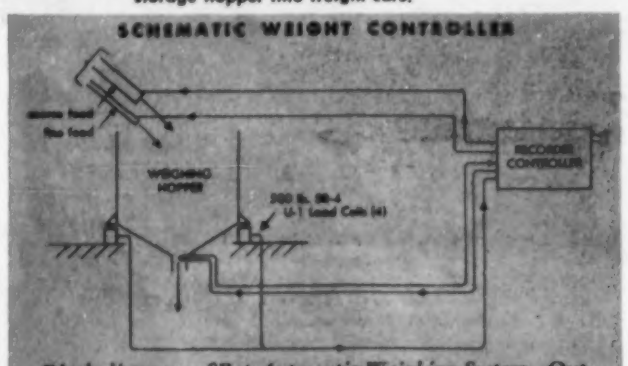
Lengths of pipe to 4 in. in diameter are being coated successfully inside and out with a boro-silicate fused film by Barrows Porcelain Enamel Co., Wiehle & Langdon Roads, Dept. IEN, Cincinnati 12, Ohio. The pipe is employed in an air heater to serve a boiler installation. Products of combustion from the boiler act as the heating medium. The glass film prevents corrosive attack. The steel in the pipe imparts structural strength. Corrosion resistance is combined with a smooth surface that minimizes clogging and simplifies washing down.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 80

If you write maker identify as IEN-1598

SR-4® Devices in Industry — Uses Unlimited

Problem: How to weigh automatically an expensive plastic from storage hopper into freight cars.



Block diagram—SR-4 Automatic Weighing System. Outputs of four 500 pound U-1 SR-4 Load Cells are totalized into strip chart recorder-controller which furnishes a complete record of each weighing cycle including final and initial weights.

Solution: A leading chemical company does it rapidly and accurately with a fully automatic SR-4 Weighing System.

This SR-4 System is giving all of these advantages:

- System will pay for itself quickly due to its very high accuracy in weighing large daily shipments of such an expensive material.
- Speed of operation (less than two minutes per 1000 lb. cycle) cuts costs.
- Only one operator needed . . . just part time.
- Automatically furnishes complete record of each weighing.
- Rugged construction minimizes maintenance.

For latest technical information please write to Baldwin-Lima-Hamilton Corp., Dept. 3013, Philadelphia 42, Penna.

TESTING HEADQUARTERS

BALDWIN-LIMA-HAMILTON
Philadelphia 42, Pa.

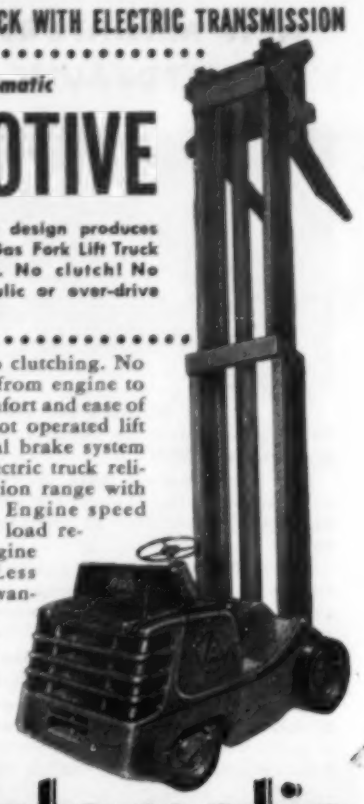
If you write maker identify as IEN-1599

AMERICA'S FIRST GAS TRUCK WITH ELECTRIC TRANSMISSION

The new Automatic

DYNAMOTIVE

Entirely new engineering design produces America's first and only Gas Fork Lift Truck with *Electric Transmission*. No clutch! No gears to shift! No hydraulic or over-drive mechanism.



No engine shock due to clutching. No mechanical connection from engine to drive unit. Maximum comfort and ease of operation for driver. Foot operated lift and tilt. Interlocked dual brake system for maximum safety. Electric truck reliability. Infinite acceleration range with minimum power loss. Engine speed automatically adjusts to load requirement. Minimum engine wear—maximum life! Less fuel consumption. All advantages of torque converters and overdrive without mechanical devices. Minimum down time. Maximum accessibility. No aisle projections.

For further data on the new Dynamotive Truck, write:

Automatic®
109 W. 87th St., Dept. B-4, Chicago 20, Ill.
WORLD'S LARGEST EXCLUSIVE BUILDER OF ELECTRIC DRIVEN INDUSTRIAL TRUCKS

If you write maker identify as IEN-1600

Here's the ROUGH TOP that RATES TOP by *Independent Test*

*all belts failed before 40° except the Quaker Rubber belt which was consistently able to move the representative cartons up an incline in *excess of 40°*.

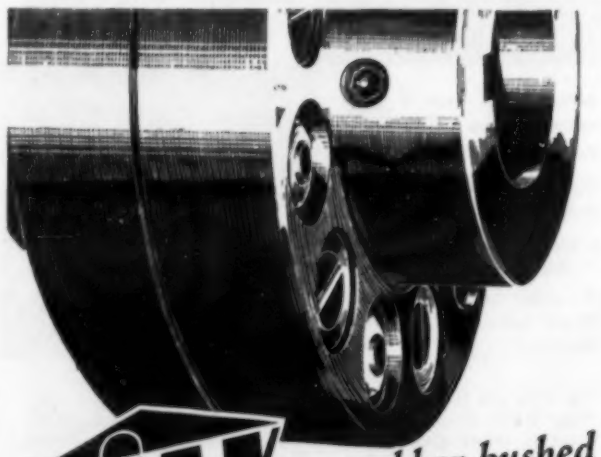
**Test data on request.*

Quaker HERCULES SAFETY GRIP CONVEYOR BELTING

When a carton-laden belt moves up an incline in excess of 40° without load-slippage . . . that's efficiency. When that belt is the *only* one to do it . . . that's *superior* efficiency. Quaker's Hercules did this in a comparative test with *all* other leading makes. The reason? Hercules' rough surface with thousands of rubber tentacles that grip and hold even the most slippery materials . . . plus the live rubber construction of its friction side for proper traction between belt and pulley. For the belt that takes cartons up the steepest incline, grips the load and gives superior service . . . specify Quaker Hercules.

QUAKER RUBBER CORPORATION
DIVISION OF H. K. PORTER COMPANY, INC.
OF PITTSBURGH
Dept. E, Philadelphia 24, Pa. Branches in Principal Cities

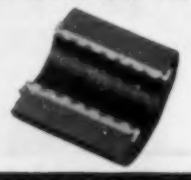
If you write maker identify as IEN-1601



AJAX *rubber bushed* **FLEXIBLE COUPLINGS**

Standard of Industry For Over 30 Years

Safeguard bearings, gears, armatures, impellers and other costly working parts. Combine positive drive with resilient flexibility. Write for catalog.

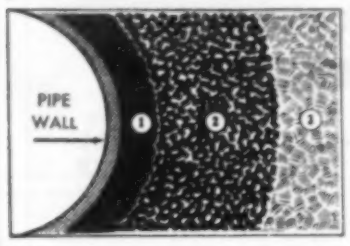


AJAX FLEXIBLE COUPLING CO. INC.
Incorporated 1920
WESTFIELD, NEW YORK

If you write maker identify as IEN - 1602

GILSULATE

the revolutionary new Triple-Zone insulation for hot underground pipes. Lowest cost per installed linear foot.



Zone 1: First line of defense against heat loss, corrosion, moisture: a dense semi-plastic core fused on by pipe's own heat.
Zone 2: Second line of defense against heat loss and water: a sintered zone of Gilsulate particles.
Zone 3: A zone of unfused Gilsulate providing final margin of thermal insulation with high load-carrying capacity.

Gilsulate granules fuse into lifetime protection on hot underground pipes; keep them insulated, water-proof, corrosion-proof, root-proof, acid/alkali-proof.

Gilsulate is easy to use:
1. Pour Gilsulate granules out of bag onto pipe.
2. Tamp down and backfill: *the job is insulated!*

Gilsulate has been tested in scores of the country's largest and most important installations. It needs no sleeves or mechanical sheaths. It requires no mixing or special handling. It can't be punctured, doesn't require removal of rocks from backfill. It can't tear or puncture pipe since it contracts and expands with the pipe.

Write for descriptive literature

AMERICAN GILSONITE COMPANY
134 West Broadway, Salt Lake City 1, Utah
or 1145 E. Jersey St., Elizabeth 4, N. J.
Affiliate of Barber Oil Corporation and Standard Oil Company of California

If you write maker identify as IEN - 1603

XEROGRAPHY

CUTS DUPLICATING COSTS!

COPIES ANYTHING WRITTEN, PRINTED, TYPED OR DRAWN ON TO PAPER MASTERS

IN 3 MINUTES!

Engineering drawings, forms, letters, bulletins, charts, reports, graphs, manuals, government regulations or anything written, typed, drawn or printed, can be reproduced with *photographic accuracy* in about 3 minutes on to an offset paper master for run off of multiple copies on an offset duplicator. Original copy may be enlarged, reduced or reproduced same size by xerography in XeroX Lith-Master copying equipment. With xerography, copies can be made from one or both sides of original material.

For use in diazo type machines, translucent intermediates can be made from any original subject in the same speedy way.

There is no limit to the versatility of the dry, electrostatic, direct positive xerography process in paperwork duplicating applications, whether it's an involved production order writing system, parts or directory list, or government directive. Xerography eliminates re-typing, proof-reading and errors.

Send for "proof of performance" folders showing how xerography is saving time and thousands of dollars for hundreds of companies in cutting duplicating costs.

THE HALOID COMPANY
54-51X HALOID ST., ROCHESTER 3, N. Y.
CANADA—The Haloid Company of Canada, Ltd., Toronto 2, Ont.

XEROGRAPHY

THE FASTEST, CHEAPEST, MOST VERSATILE WAY TO MAKE MASTERS FOR DUPLICATING.

XEROX

If you write maker identify as IEN - 1605

TRUCK . . Engine driven hydraulic loads pulp wood from truck to flat car

Source: CLARK EQUIPMENT CO.
Dept. IEN, Battle Creek, Mich.

Operator controls movements

Pulploader is a new assembly of hydraulic attachment and one of the company's engine-driven trucks. The truck is Series 15LH fork lift design. The attachment applies in place of the forks and connects to the trucks' hydraulic equipment. It carries a pair of wire rope slings equipped with hooks at the bottom.

The hooks are connected beneath a load, usually 1¾ cords, on a truck. The load is lifted and carried to a flat car to be lowered into position, with the attachment in forward tilted position, as shown in the illustration. When the load is on the car, the operater moves a control to actuate a hydraulic cylinder that releases the hooks in the sling beneath the load and the attachment is raised to pull the wire ropes free ready for the next lift.

The attachment tilts 99½ in. forward from the vertical. It can be raised by the truck to a height of a little under 27 feet. Load capacity is 9,000 pounds. The bumper grille, forming part of the attachment, measures 84 by 78 inches.

If you write maker identify as IEN - 1606

LIGHTING . . Reflector lamp produces accurately controlled beam

Source: WESTINGHOUSE ELECTRIC CORP.
MacArthur Ave., Dept. IEN, Bloomfield, N. J.

Wide beam design at top

Yards, construction jobs, stages, are typical points for application of the new 300-watt reflector lamp with its PAR-56 bulb. Installation can be made in any position for operation on nominal 110-volt input. Rated life is about 2,000 hours.

The base is a mogul end prong design for electrical connection only and not to support the lamp. On outdoor applications, the unit should be protected from the weather. The bulb may break on contact with water even though it is made of heat resistant glass. The two types include narrow and wide beam. List is about $4.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 1607

WANTED!

. . . A CHALLENGE TO SOLVE YOUR FRICTION PROBLEMS

Aetna engineers and metallurgists are working constantly with equipment builders to improve their products. They specialize in hard-to-solve friction problems and hard-to-make ball and roller bearings and precision parts. Why not challenge them to solve YOUR next friction problem? Engineering analysis, recommendations and quotations without obligation.

AETNA BALL AND ROLLER BEARING COMPANY
4600 Schubert Avenue
Chicago 39, Illinois

Aetna

Standard and Special Ball Thrust Bearings • Angular Contact Ball Bearings • Special Roller Bearings • Ball Retainers • Hardened and Ground Washers • Sleeves • Bushings • Miscellaneous Precision Parts

If you write maker identify as IEN - 1608

QUICK DELIVERIES ON UNIVERSAL *Flexible* METAL HOSE

UNIVERSAL METAL HOSE CO.
2181 South Kedzie Avenue • Chicago 23, Illinois

If you write maker identify as IEN - 1609

BRADY Wire Markers stick to your finger from Card to Wire

You *can't drop* a Brady Wire Marker! It *sticks to your finger* until you put it on the wire, then sticks-quick and permanently.

Brady's superior adhesive is not affected by contact with fingers. And there's no cumbersome, skin-cutting tab to get rid of.

Self-sticking Brady Wire Markers are silicone-coated to resist dirt, grease, grime. Over 1,000 different markers in stock. Specials made to order. Write for FREE SAMPLES today!

WIRE MARKERS · PIPE MARKERS · SAFETY SIGNS · AISLE MARKERS · MASKS & STENCILS · PRINTED ROLL TAPES

MANUFACTURERS OF SELF-STICKING PRODUCTS

W. H. BRADY COMPANY
745 W. Glendale Ave., Milwaukee 12, Wisconsin

If you write maker identify as IEN - 1610

UNUSUAL BARGAINS

Save Time and Money on Inspections

IMPORTED STEREO MICROSCOPE

$160 VALUE *Only* **$85.00 pstpd.**

Wide, 3 Dimensional Field
Excellent Depth for Working
Under Magnification!

New, for the first time—a fine, imported Binocular Microscope at a substantial saving. Used for inspections, examinations, counting, checking, etc. Fixed 3 power objective with 3 pairs of matched eyepieces to give you powers of 15X, 30X, 45X. Rack and pinion focusing, interpupillary adjustment. Instrument is removable from base for mounting on equipment or bench. Working distance—3¼". Adjustable for extra height. Fine hardwood case included. Recommended for lab., shop, factory or home use. We guarantee complete satisfaction or your money back.

Order Stock No. 70,011-AS.$85.00 Pstpd.
Send check or M. O., or order on open account.

For Precision Timing in Plant or Lab!

ALARM WRIST WATCH

- **17 JEWEL**
- **LUMINOUS**
- **SHOCK-PROOF**

Only **$49.50 pstpd.**

For timing of production operations, laboratory phases, or "alerting" to appointments. Imported from Germany! 17 jewel precision timepiece with luminous dial for night use. Alarm is set by turning glass rim. Tone may be adjusted to loud or soft. Watch runs 42 hours on one winding — is shock-proof, anti-magnetic. Money-back guarantee.

Order Stock No. 50,030-AS.....$49.50 Pstpd.
(Send check or M. O., or order on open acct.)

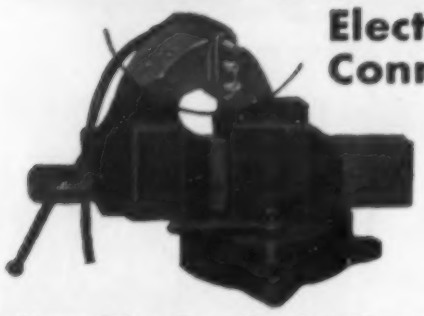
BARGAINS GALORE! GET FREE CATALOG "AS"

If you haven't seen our big, FREE Catalog, you don't know what you're missing. Fantastic variety—never before have so many lenses, prisms, optical instruments, and components been offered from one source. Positively the greatest assembly of bargains in all America. Imported! Domestic! Telescopes! Microscopes! Hand Spectroscopes, Prisms, Lenses, Reticles, Mirrors and dozens of other hard-to-get optical items. Write for FREE CATALOG "AS".

EDMUND SCIENTIFIC CORP., Barrington, N. J.

If you write maker identify as IEN - 1611

Shatterproof Electrical Connectors



Working conditions often subject electrical connectors to jerks . . . blows . . . and squeezing action, as bad as that pictured above. When this happens many apparently good connectors quickly become out-of-shape, develop insulation cracks and loose contacts . . . or literally explode.

Not JOY portable plugs and sockets however . . . their one-piece molded Neoprene construction and patented contact design provide many advantages not found in other brands.

yours . . . *ask for it*

Bulletin MC108 provides valuable additional information on JOY electrical plugs and receptacles. Ask us for your free copy.

M.E 153.9

JOY MANUFACTURING COMPANY
HENRY W. OLIVER BUILDING, PITTSBURGH 22, PENNSYLVANIA
IN CANADA: JOY MANUFACTURING COMPANY (CANADA) LTD., GALT, ONTARIO

If you write maker identify as IEN - 1612

Abart GEARS

CUSTOM-MADE
precision-cut to your order

Abart means fine quality gears . . . in a wide variety of types and sizes . . . all cut to your exact specifications. No stocks are maintained! Abart gears are custom-made in steel, brass, bronze, cast iron, any metal and non-metallic gear material. Precision is assured by Abart finishing equipment which permits shaving gears in pitches from 64 D. P. to 5/7 D. P. Complete Abart facilities assure prompt service, right price—in any quantity.

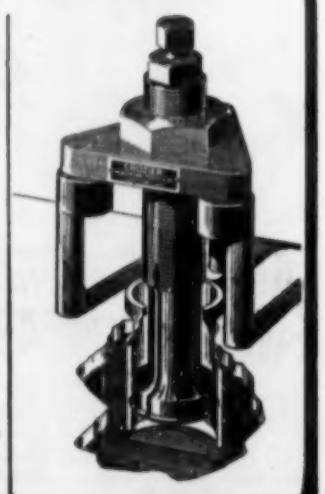
Send B/P and specifications or samples for quotation. Specify material and nature of work.

ABART GEAR and MACHINE CO.
4828 WEST 16TH STREET • CHICAGO 50, ILLINOIS
Manufacturers of Gears, Speed Reducers and Gearmotors

If you write maker identify as IEN - 1613

NEW EXTRACTOR
removes bushings from blind holes ...cuts time 75 per cent

The entirely new method of extracting bushings, bearings, sleeves, liners, etc. Eliminates necessity for machining, minimizes the hazard of injury to casings or excessive dismantling of equipment, handles holes from ½ to 2"—over 5 tons have been extracted with unit. Eliminates as much as 75 per cent of labor and time, slashes inventory.



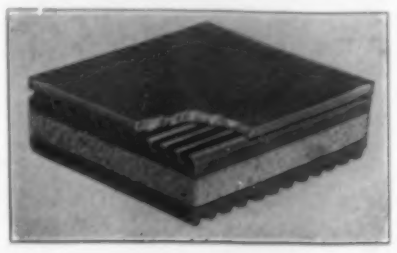
For complete information write Department IEN-2

CROZIER *Machine Tool Co.*
654 NO. PRAIRIE AVENUE, HAWTHORNE, CALIFORNIA

If you write maker identify as IEN - 1614

ISOLATING . . Vibration insulator replaces anchor bolts under machine

Source: KORFUND COMPANY
48-35D 32nd Pl., Dept. IEN, Long Island City 1, N. Y.



Bulletin VPS

Elasto-Rib Damper is a new pad type unit that employs the elastic and damping properties of cork and rubber. It applies under the feet of a machine to absorb vibration and prevent "walking" so anchor bolts are not required.

A cork plate is permanently bonded between two layers of oil resistant neoprene rubber. The rubber layers are grooved at 90 deg. with each other. A load distributing top plate is permanently secured in place. A special construction, for use under machine legs equipped with casters, measures 2 in. in diameter and consists of a retaining cup attached to the top plate.

If you write maker identify as IEN - 1615

MIXING . . Bottom driven machine excludes air from housing interior

Source: COWLES COMPANY
150 Trackside Place, Dept. IEN, Cayuga, N. Y.

For processing

Test operation, blending polyethylene and wax, resulted in the development of this new Bottom Drive model of the company's Ultrafast Dissolver. The test operation showed it more efficient to seal the drive shaft beneath the liquid in order to prevent air from following down the shaft and into the solution. The mixer housing can be pressurized readily with the motor housing at the bottom as shown in the illustration. Charging the tank is simplified also. The new machine is available in specified sizes built to order.

If you write maker identify as IEN - 1616

The little tube shown in the illustration may soon become an integral part of control equipment required in every motor vehicle. It is a nine stage multiplier phototube, RCA-6328, for head light control. It is manufactured by Radio Corp. of America, 415 So. 5th St. Dept. IEN, Harrison, N. J. The tube is the actuating element in an electronic control that will dim your head lights upon approach to bright light area or upon approach, from the opposite direction, of a motor vehicle with bright lights.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 56

If you write maker identify as IEN - 1617

SMALL, LIGHT TOOL SPEEDS HEAVY WORK

'TUGIT' is a portable, lever-operated hoist that gives powerful spur-geared efficiency. It lifts, pulls, and stretches at any angle. Action is easy, fast, and smooth. A 1-ton load can be lifted or shifted with a lever pull of only 40 lbs. Control is accurate — loads can be moved as little as 3/32" with the 1-ton size. It's safe to use — has a quick-acting automatic load brake, tough chain, non-fracturing hooks, and non-kicking handle.

'TUGIT' is tool-box size. Every industry has countless uses for it. Whether you want to square a frame, pull a post, stretch cable, or lay pipe, 'Tugit' is a handy hoist to have around. Available in 1 and 2-ton sizes. Your "Shaw-Box" Distributor will gladly give you all the facts — or write for Bulletin 388.

'TUGIT'® HOISTS

MANNING, MAXWELL & MOORE, INC.
MUSKEGON, MICHIGAN

Builders of "Shaw-Box" and 'Load Lifter' Cranes, 'Budgit' and 'Load Lifter' Hoists and other lifting specialties. Makers of 'Ashcroft' Gauges, 'Hancock' Valves, 'Consolidated' Safety and Relief Valves, 'American' Industrial Instruments, and Aircraft Products.

If you write maker identify as IEN - 1618

Machinery, Gas and Diesel Engine Builders . . . ATTENTION!

TITAN-KIRKLAND Combination STUD DRIVER AND PULLER . . .

- incorporates ROLL ACTION to *GRIP* as little as ½" of unthreaded body of stud

- REQUIRES ONLY A SLIGHT LEFT OR RIGHT HAND TURN TO GRIP STUD.
- WHEN ROTATION IS STOPPED, TOOL MAY BE LIFTED OFF STUD WITHOUT REVERSING DIRECTION OF ROTATION.

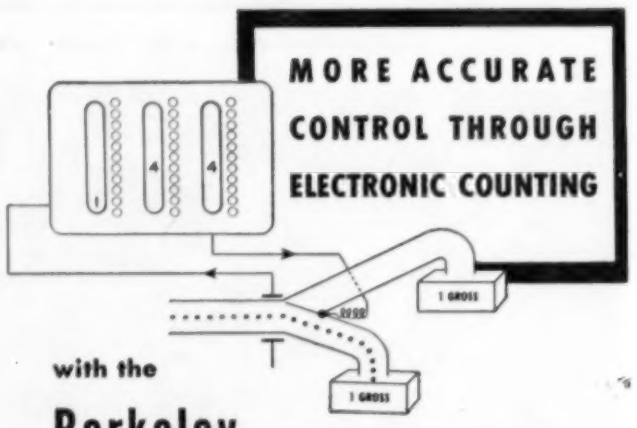
Made in T-Handle, Ratchet, and power styles in standard sizes from 3/16" to 1" inclusive. Larger sizes on request.

WRITE FOR FREE LITERATURE, TODAY!

TITAN TOOL CO.
Production Tools
52 MAIN ST., FAIRVIEW, ERIE COUNTY, PA.

If you write maker identify as IEN - 1619

MORE ACCURATE CONTROL THROUGH ELECTRONIC COUNTING



with the

Berkeley Preset Counter-Controller

FOR PRECISE CONTROL OF—
- Quantity packaged
- Cutting to length
- Stacking operations
- Sorting
- R.P.M.
- Flow

FEATURES—
- Controller uses high speed electronic counter
- Simple pushbutton control; digital indication
- Absolute accuracy of pre-selected number
- Single or dual control
- Designed for production use

Complete application data on request; write for details.

M-27

Berkeley *division*
BECKMAN INSTRUMENTS INC.
Dept. Q2, 2200 Wright Avenue, Richmond, California

If you write maker identify as IEN - 1620

Femco CONTROLS

SUPERVISORY CONTROL
Signals by carrier frequencies over your existing power lines!

TELEMETERING
Measures, transmits and records operating data.

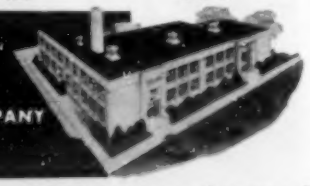
PUMP INDICATION
Watches remote pumps, valves, water or liquid levels and alarms.

INDUSTRIAL CONTROL SYSTEMS

Designed to relay information between remote stations and central control panels. Femco equipment guards vital points in your process, eliminating constant attendance.

Ask for YOUR Femco Data Kit

FARMERS ENGINEERING
& MANUFACTURING COMPANY
IRWIN, PENNSYLVANIA



Specialists in Electronic Communication and Control

If you write maker identify as **IEN-1621**

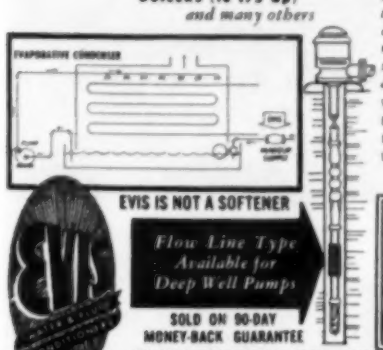
The Simplest Way to
SOLVE SCALE PROBLEMS

PATS. APPLIED FOR

Proven Uses Include
ALL PIPING SYSTEMS
CONDENSERS (most types)
COOLING TOWERS
ENGINES & COMPRESSORS
CUBE & FLAKE ICE MAKERS
BOILERS (to 175 wp)
and many others

EVIS Water Conditioners are helping industry conquer its costly scale problems. Plant equipment is made to operate at higher efficiency. Maintenance costs are profitably lowered and shut-downs for periodic cleanups are often entirely eliminated. The EVIS units are Specially Processed to impart a continuous catalytic action on water-solids flowing through it. This action alters physical behavior sufficiently to inhibit most scale formations. Many thousands of EVIS Water Conditioners are now in service.

Write for further information or ask your Plumbing Supply, Air-Conditioning-Refrigeration or Industrial Equipment Jobber.

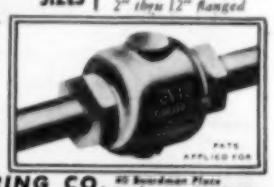


SIZES | ⅜" thru 2" screwed; 2" thru 12" flanged

EVIS IS NOT A SOFTENER

Flow Line Type Available for Deep Well Pumps

SOLD ON 90-DAY MONEY-BACK GUARANTEE



PATS. APPLIED FOR

EVIS MANUFACTURING CO. 40 Boardman Place San Francisco 3, California

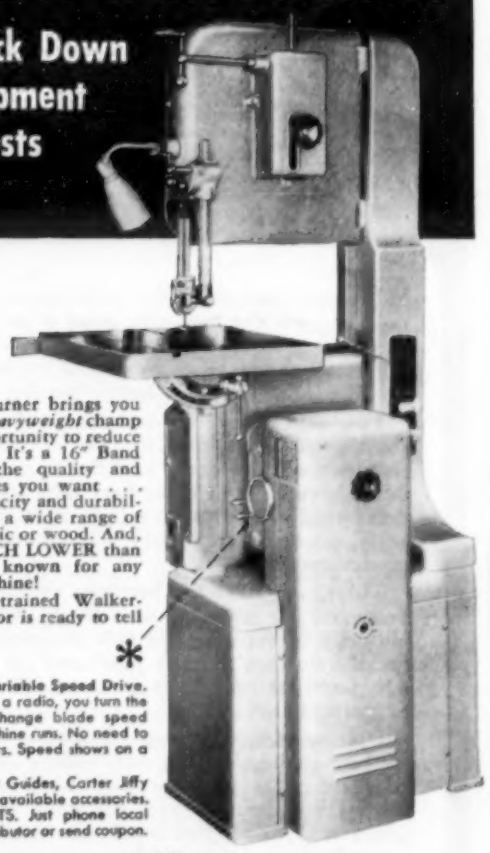
FRANCHISED REGIONAL DISTRIBUTORS

WHITTIER (Calif.) — KEN-EVIS COMPANY
SAN BERNARDINO (Calif.) — KNUPPE & WRIGHT
SAN FRANCISCO — NORTH EVIS AGENCY
RENO — WATER CONDITIONING SALES CORP.
SEATTLE — EVIS-NORTHWEST
CHICAGO — EVIS-GREAT LAKES COMPANY
OMAHA — EVIS-MIDWEST, INC.
DALLAS — EVIS-SOUTHWEST CO.
ATLANTA — EVIS-SOUTHEAST CO.
PHILADELPHIA — EVIS-MIDEAST CO.
ALBANY (New York) — EVIS-NORTHEAST CO.
EXCLUSIVE MARINE DIST. — MORAN-EVIS CO. SAN FRANCISCO

If you write maker identify as **IEN-1622**

NEW 16" Band Saw with speeds 50 to 4500 SFM

another Walker-Turner
LIGHT-HEAVYWEIGHT
to Knock Down Equipment Costs



Now, Walker-Turner brings you another *Light-Heavyweight* champ . . . another opportunity to reduce equipment costs. It's a 16" Band Saw with all the quality and efficiency features you want . . . with all the capacity and durability you need for a wide range of jobs, metal, plastic or wood. And, at a PRICE MUCH LOWER than you have ever known for any comparable machine!

Your factory-trained Walker-Turner distributor is ready to tell you about: —

*

***Quick-change Variable Speed Drive.** As easily as dialing a radio, you turn the hand wheel and change blade speed smoothly, while machine runs. No need to change belts, pulleys. Speed shows on a graduated scale.

And Improved Saw Guides, Carter Jiffy Tires, extra weight, available accessories. GET ALL THE FACTS. Just phone local Walker-Turner Distributor or send coupon.

WALKER-TURNER
walker-turner DIVISION
KEARNEY AND TRECKER CORPORATION
PLAINFIELD, N. J.

SOLD ONLY THROUGH *TRAINED* INDUSTRIAL DISTRIBUTORS

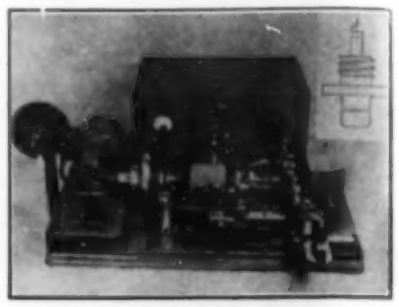
DRILL PRESSES — Hand and Power Feed • RADIAL DRILLS • Wood and Metal Cutting BAND SAWS • TILTING ARBOR SAWS • RADIAL SAWS • JIG SAWS • LATHES • SPINDLE SHAPERS • JOINTERS • BELT AND DISC SURFACERS • FLEXIBLE SHAFT MACHINES

Use this space
to send for full details and specifications.
Walker-Turner Division, Kearney & Trecker Corp.
Dept. IEN-2, Plainfield, N. J.

If you write maker identify as **IEN-1624**

WELDING . . Automatic machine forms and welds "whisker" to anode pin

Source: FEDERAL TOOL ENGINEERING CO.
1386 Pompton Ave., Dept. IEN, Cedar Grove, N. J.



New Tweezer-Weld

Model SW-412 designates new assembly of automatic equipment to the company's condenser discharge resistance welder, previously described IEN-8298-51. The new equipment feeds "whisker" wire measuring 0.008 in. in diameter from a spool at the left hand side. **It welds,** forms and cuts off at a 30 or 45 deg. angle. The operator loads and unloads the work pieces. Production is 1,200 pieces per hour. The company is prepared to equip its standard welder with similar automatic equipment for specified application.

If you write maker identify as **IEN-1625**

ADHESIVE . . Precoated on copper to manufacture printed circuits

Source: RUBBER & ASBESTOS CORP.
225 Belleville Ave., Dept. IEN, Bloomfield, N. J.

Bond strength to 35 lb. per sq. in.

Plymaster trade names a new adhesive which the company is precoating on 1-oz. or 2-oz. electrolytic copper sheet. The coated sheet is offered to manufacturers of printed circuits. They will apply it on a phenolic resin base, or on a silicone base laminate, in preparation for manufacture of the printed circuits. Type N is intented for use on phenolic resin bases to pass the 200 deg. C. solder dip test. Type E will pass the 235 deg. C. test. Both the copper sheet and the adhesive are inspected prior to packing.

If you write maker identify as **IEN-1626**

FURNITURE . . Drafting chair, swivel design, adjustable for height

Source: AJUSTO EQUIPMENT CO.
2144 Madison Ave., Dept. IEN, Toledo 2, Ohio

Model RUC-2230

Three sizes are available in this new Adjustrite chair. Maximum heights are 26, 30 and 34 inches. Adjustment is through 8 inches. The chair shown has a 2-in. upholstered seat and adjustable back rest. It features a lock in the support column that permits raising the seat to a desired height where the lock grips and holds until it is released by the user. **List price** of the upholstered unit is $32.20. Other designs with a plywood or solid wood saddle seat are also available.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as **IEN-1627**

A PAID NEWS ADVERTISEMENT BY THE CARBORUNDUM CO.

75% LOWER POLISHING COSTS with Cone-Loc Drum Sander using coated abrasive strips

Low cost polishing is yours when you combine coated abrasive strips cut from Abrasive Rolls by CARBORUNDUM with the CONE-LOC Drum Sander—a light, balanced, safe polishing wheel used on flexible shaft tools or stationary bench grinders. The abrasive strips are held securely by the hinged halves of the wheel when the arbor nut is tightened against the locking cone washer. The assembled wheel performs the same as a solid wheel...cuts smoothly...is perfectly balanced...never bounces at the joint. It never loses diameter. Worn strips are replaced in seconds.

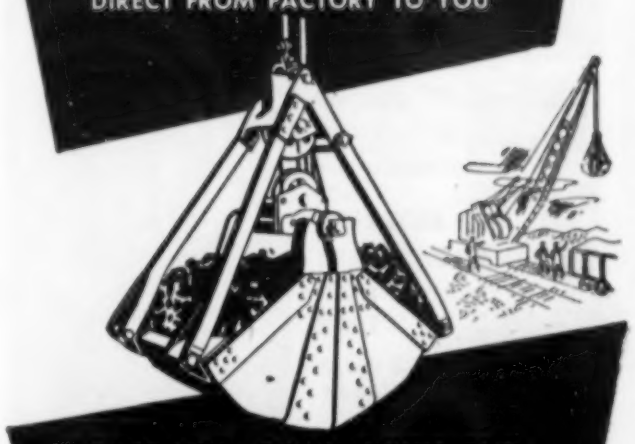
Compare the abrasive costs: Reheading a setup wheel 6½" x 1" costs approximately 21 cents. An abrasive belt of the same area costs up to 17 cents. A 22" strip of Metal Cloth, Industrial Cloth, Resin Industrial Cloth, or Waterproof Cloth—cut from a 1" Abrasive Roll by CARBORUNDUM—costs you 5 cents or less.

CONE-LOC Drum Sanders, with rubber or felt cushions for smooth, even cutting, are available in 6¼" diameter with 1", 1½" or 2" faces—and with rubber cushions in 8", 10" or 12" diameters with 2" faces. Distributed exclusively by your CARBORUNDUM Distributor. Call him—he's listed under "Abrasives" in the yellow pages. Or use the inquiry form provided by this publication. **The Carborundum Company,** Niagara Falls, N. Y.

"Carborundum" is a registered trademark of The Carborundum Company, Niagara Falls, New York

If you write maker identify as **IEN-1628**

BROWNHOIST BUILDS BETTER BUCKETS
— for less money
DIRECT FROM FACTORY TO YOU

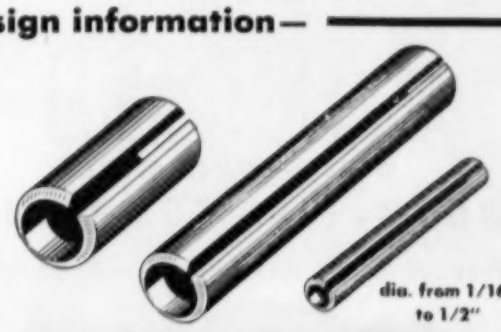


ROPE-REEVE, POWER WHEEL AND LINK TYPE
Write for illustrated catalogue
INDUSTRIAL BROWNHOIST CORPORATION
BAY CITY, MICHIGAN

146

If you write maker identify as **IEN-1629**

Design information—



dia. from 1/16" to 1/2"

ROLLPIN

. . . the slotted tubular steel pin with chamfered ends

- Easily driven into holes drilled to normal production tolerances
- Self-locking . . . exerts constant pressure against hole walls
- Easily removed with drift or pin punch
- Fits flush . . . is reusable

Offers assembly-time savings over rivets, set screws, straight, serrated or cotter pins, dowels, hinge pins and many others.

WRITE for detailed catalog—Elastic Stop Nut Corporation of America, 2330 Vauxhall Road, Union, N. J. Address Dept. R18-253.

If you write maker identify as **IEN-1630**

AMAZINGLY COMPACT GEARING!

The most frequently cited reason for specifying Cone-Drive gears and speed reducers is "their amazing compactness."

The reason why Cone-Drive gears are so compact is that they are 'double-envelóping'. They thus have more teeth in continuous contact and load per tooth is distributed more evenly over each tooth face.

As a result, smaller gears—up to ⅓ smaller center distances—can be used to carry the loads when Cone-Drive gears are specified.

If space saving is one of your design objectives, it will pay you to look into Cone-Drive gears and reducers . . . NOW.

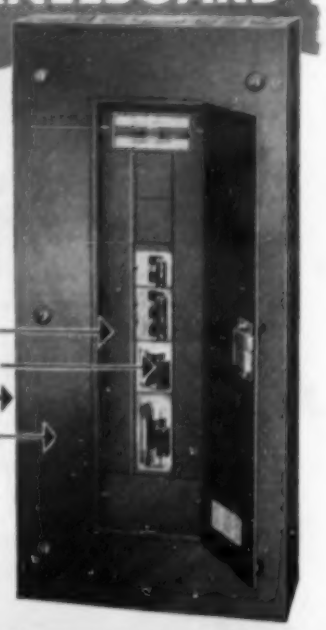
They can be a big help to you and they are available in a wide range of standard sizes and ratios.

CONE-DRIVE GEARS Division Michigan Tool Company
DOUBLE ENVELOPING GEAR SETS & SPEED REDUCERS
7171 E. McNichols Road • Detroit 13, Michigan

If you write maker identify as IEN-1631

SQUARE D's

MHP DISTRIBUTION PANELBOARD



So easy to order and stock. "Off-the-shelf" delivery of packaged components!

INTERIOR
"PLUG-IN" BREAKERS
BOX
TRIM

for 240 Volt, 3 Phase, 3 or 4 wire power systems.

Write Square D Company, 6060 Rivard St., Detroit 11, Mich., for descriptive bulletin

ASK YOUR ELECTRICAL DISTRIBUTOR FOR SQUARE D PRODUCTS

SQUARE D COMPANY

If you write maker identify as IEN-1632

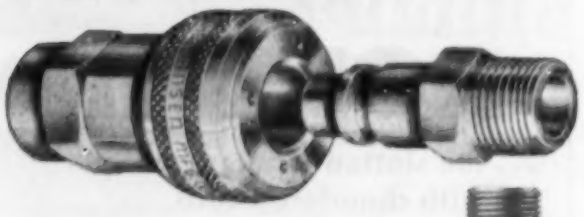
HANSEN

QUICK-CONNECTIVE

PUSH-TITE COUPLING

TRADE MARK

Provides Instant Automatic Flow or Shut-Off



To connect a Hansen Push-Tite Coupling, you merely push the Plug into the Socket with one hand. Flow is instantaneous.

To disconnect, push back sleeve on Socket . . . Coupling disconnects and flow is shut off instantly and automatically. No tools required. When Coupling is connected, Plug is free-swiveling, thus eliminating any possibility of kinks in hose.

Two-way shut-off and straight-through Couplings also available.
WRITE FOR CATALOG

THE HANSEN MANUFACTURING COMPANY
5311 WEST 150th STREET • CLEVELAND 11 OHIO

If you write maker identify as IEN-1633

Actually a handy, 48-page manual for your desk or file. Describes and diagrams Titeflex® Seamed and Uniflex Seamless Metal Hose, standard and special fittings, couplings, typical assemblies—with tabulated specifications for easy ordering. Engineering data include working pressures, flow rates, frictional losses, how to install and care for flexible metal hose. Send coupon for your copy. No obligation.

Titeflex

TITEFLEX, INC.
506 Frelinghuysen Avenue, Newark 5, N.J.
Please send me your new Titeflex Flexible Metal Hose Catalog No. 200.
Name
Title
Company
Address
City Zone State

If you write maker identify as IEN-1634

TRUCK . . Tool box trailer transports working tools to the job

Source: AEROIL PRODUCTS CO.
69 Wesley St., Dept. IEN, South Hackensack, N. J.

Protects tools

A hinged cover closes and locks over the top of this new 6-ft. wheel mounted tool box. A tow frame extends from one end so the box can be attached to the rear of a motor vehicle. Sliding legs retract or lower to the ground to hold the box in steady position on the job. Overall height is 49 inches. Loading height is 41 inches. Load capacity is 2,000 pounds.

The towing eye can be placed at any height between 24 and 38 in. above the ground to match the rear end of various vehicles such as those employed by contractors, highway departments, public utilities, water works, maintenance and municipal departments, pipe line companies. The interior of the box includes partitions and sliding trays for orderly safe storage of large or small tools and working parts.

If you write maker identify as IEN-1635

PACKAGING . . Cross tape attachment for Type FA package wrapping machine

Source: PACKAGE MACHINERY CO.
East Longmeadow, Dept. IEN, Springfield, Mass.

A finished package

Cellophane tape, measuring 3/32 or 1/4 in. in width, is applied to the roll fed wrapper before it is cut off by a new cross tape attachment on the company's automatic Type-FA adjustable wrapping machine. The tape is located accurately near the end of the package or at any desired location in relation to its length.

It applies around the girth of the package and can be made to project any distance beyond the lap so it can be taken hold of and torn off to open the package quickly. By placing the tape near the end of the package the contents can remain in protected position to be withdrawn one or two at a time as required. The attachment does not affect the size range that the Type-FA machine will wrap.

If you write maker identify as IEN-1636

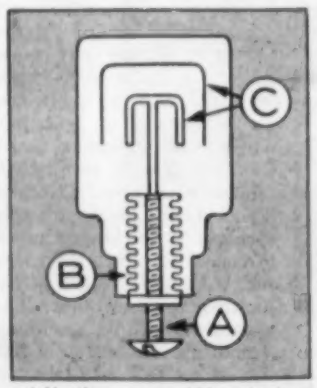
Battery makers are invited to send data on size and quantity requirements sufficient to run comparative tests between the separators they now are using in their battery construction and a new synthetic resin impregnated Darak separator. The new unit is manufactured by Dewey & Almy Chemical Co., 62 Whittemore Ave., Dept. IEN, Cambridge 40, Mass. Standard sizes will be shipped at once. Special sizes will be scheduled for production at the new separator plant at Acton, Mass. The separator is impregnated to withstand high temperature and hot acids. Construction is in felted fiber. The separators apply between the positive and negative plates in the battery.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 80

If you write maker identify as IEN-1637

A PAID NEWS ADVERTISEMENT BY CLIFFORD MANUFACTURING CO.

MOTION TRANSFER through hermetic seal made possible by bellows assembly . . . used in many applications.



Adjusting screw (A) actuates bellows (B) which then adjusts variable plate (C) within vacuum without disturbing seal.

When Jennings Radio Manufacturing Company first experimented with moving a variable plate in a vacuum capacitor, it was found that ordinary sealing methods would not work. Clifford Bellows Assemblies, however, proved not only leakproof but flexible. They formed a perfect seal yet permitted full movement of the plate. They also remained vacuum tight after silver solder brazing — and easily withstood the 480°C bake-out after brazing.

Clifford Hydron Bellows Assemblies are used as expansion chambers in mercury-filled wave guides, oil-filled transformers and other electric and electronic equipment — and for changing frequency inside magnetron tubes, making adjustments inside hermetically-sealed instruments. They permit extension, retraction, and 360° rotation with 100% metallic seal.

Clifford will be glad to answer any questions regarding the use of bellows in your product. For further information, write for bulletin: "What To Consider When Selecting a Metallic Bellows." Clifford Manufacturing Company, 146 Grove Street, Waltham 54, Massachusetts. *Division of Standard-Thomson Corporation.* Sales offices in New York; Detroit; Chicago; Los Angeles; Waltham, Mass. 36.4.7A

If you write maker identify as IEN-1638

Write for New 16 Page Catalog

ONE MILLION RELAYS

Over 1000 Types

24 HOUR DELIVERY FROM OUR STOCK!

- Standard, Respected Brands
- Brand New, Boxed
- Inspected and Guaranteed
- Priced to Your Advantage

Our relay stock, which is the world's largest, has been carefully built up over a period of several years. Nothing but first run, professionally selected items are carried.

Send us your relay requirements. You will receive immediate quotations.

samples on request. *Phone, Wire or Write*

Relay Sales

SEeley 8-4146

4721 W. MADISON STREET

DEPT. No. 9 CHICAGO 44, ILLINOIS

If you write maker identify as IEN-1639

Instant Heat

when and where you need it

When you heat your plant with Reznor gas-fired unit heaters, the heat you need is produced at the point of use. Each Reznor unit reacts instantaneously to the requirements of its immediate surroundings. That's the key to heating economy.

You don't have to maintain the constant stand-by firing required by a central heating system. Automatic Reznor heat is instant heat. You don't have to pour extra heat into areas which don't need it. Each Reznor heater acts independently, goes to work only when heat is really needed nearby.

There's no time lag between the moment of need and the moment of delivery. It's easy to maintain an even, comfortable temperature. And because Reznor heat is produced on the spot you save the fuel dollars wasted on heat lost in transmission.

Unit heater economy and flexibility make this method of heating the outstanding choice for new industrial construction. In older plants Reznor unit heaters offer the same advantages when used for supplemental heating. For offices and other areas where higher temperatures are needed, for outlying buildings which cannot practically be reached by a central heating system, and for trouble spots such as areas facing large doors, Reznor unit heaters are the answer.

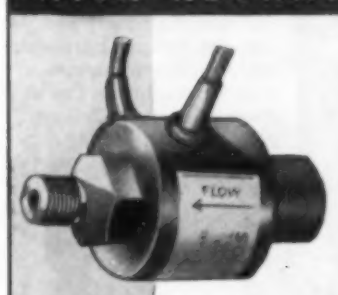
Before you make any heating decision check the Reznor catalog in Sweet's Plant Engineering File or write to the **Reznor Manufacturing Company, 10 Union Street, Mercer, Pa.**

THE WORLD'S LARGEST-SELLING GAS UNIT HEATER

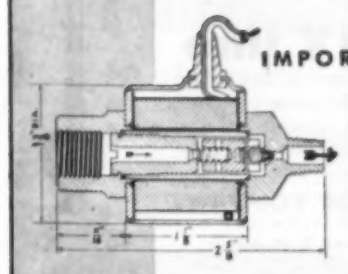
REZNOR HEATERS

If you write maker identify as IEN-1641

SOLENOID VALVES
WITH ADVANTAGES PLUS



This valve of unique and practical design has proved itself in the past seven years to have extreme endurance and reliability. Important parts are stainless steel and no gaskets are used whatsoever. All parts silver brazed for rigidity. Look no further for a solenoid valve that will give years of trouble free, efficient service. Write today for full information. Samples available for inspection and test.



IMPORTANT FEATURES:

- All brazed construction
- No mounting brackets
- Weight 5 ounces
- Positive seal at any pressure
- Operates in any position
- Operates up to 1000 cycles per minute
- Power consumption 1 to 3 watts
- Pressure up to 200 p.s.i.
- Straight through flow

Specialty PRODUCTS CO., INC.
3725 Monitor Ave. • Minneapolis 16, Minnesota

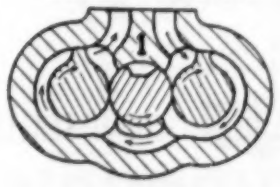
If you write maker identify as IEN-1642

BERRY
Rotating Piston
PUMP *or* MOTOR

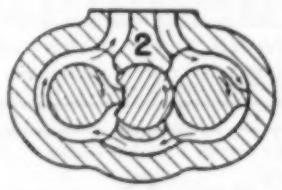
Operation as a pump or as a motor is continuous, smooth, quiet, without pulsation. Basic simplicity gives the design long life with low maintenance as pumps in elevator service or on machine tools. Used as transmission in oil fields, mines, steel mills, mobile vehicles, the rugged construction endures many thousands of hours of rough treatment in all climates without servicing.

AS A MOTOR

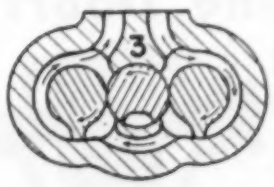
All three members are geared together in a 1:1 ratio. Input shaft is on center member.



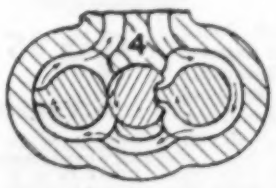
POSITION 1..Both pistons facing up, oil entering the right-hand port, driving both pistons in clockwise direction, existing through the left port.



POSITION 2..Both pistons rotated to right, oil bypassing the left-hand one to the exit. The right-hand piston sealing against the center rotor or rolling seal.



POSITION 3..Both pistons rotated to face down, the oil driving both while the center rotor seals both pistons.



POSITION 4..Both pistons rotated to the left, the oil bypassing the right one and driving the left one. The left piston is sealing against the rolling seal.

Two pressure ratings are 500 and 1,500 PSI. Rating is 60 to 240 GPM. for the 500 PSI. assembly with one to four pumping chambers on a common shaft. Rating is 9.4 to 28.2 GPM. for the 1,500 PSI. pump with one to three chambers.

A third series of units, 32-10 model, is now available in one, two or three chambers. Capacities, as pumps, are 60, 120 and 180 GPM. Motor ratings to 300 horsepower and pressure are 1,000 psi. continuous; 1,500 psi., intermittent.

CATALOG 5310

Explains action, shows sections and combinations, includes performance specifications and selection data.

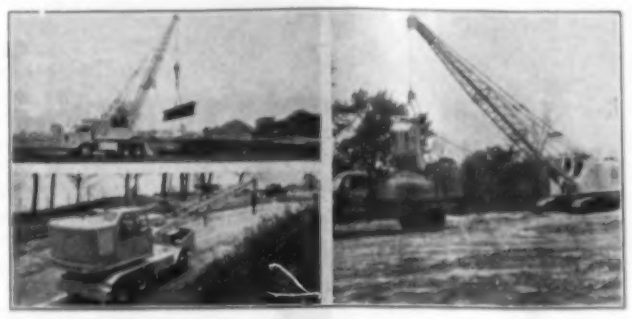
ALL MODELS OF ALL SERIES ARE AVAILABLE FOR IMMEDIATE SHIPMENT FROM STOCK.

Berry Division
Oliver Iron and Steel Corporation
1019 Oliver Building • Pittsburgh 22, Penna.

If you write maker identify as IEN-1644

CRANE . . Mobile assembly is convertible to ¾-yd. power shovel

Source: CLARK EQUIPMENT CO.
Dept. IEN, Battle Creek 49, Mich.



For utility application

New size with ¾-yd. capacity, when rigged as a shovel, has been added to the Michigan crane line with either truck or crawler mounting as shown in the illustration. The ¾-yd. unit increases the previous maximum capacity of ½ yard. The engine driven truck, on which the crane mounts, is available as a 6 by 4 or 6 by 6 all-wheel drive with optional power steering. Travel drive is by a separate engine with 5 speeds forward and one in reverse.

The crawler mechanism employs an enclosed drive with gears operating in oil and is fitted with automatic spring loaded self-locking brakes that are disengaged by air rams when traveling. The crawler tracks mount pads 24 in. in width to ride self-cleaning drive sprockets.

The crane structure includes a cab with an overhead window and unit cab assembly separate from the engine cab to minimize engine noise for the operator. The crane rides on a one piece steel casting with a hinge pin bracket and roller brackets cast integral in its base. Side frames are made of steel. Primary and secondary power reductions from the engine to the main drive are through two sets of spiral bevel gears enclosed and running in oil.

The boom hoist is independently operated worm gear design with the hoist housing on the operator's side for servicing and adjustment. Hoist and crowd drums are mounted on the same shaft and are actuated by air ram multiple segment clutches. Each drum carries a 30-in. brake. Shafts and drums are mounted on anti-friction bearings. Shaft and drum clutch controls are air ram operated. Inside removable counterweights are mounted on guide posts and can be raised or lowered by power.

If you write maker identify as IEN-1645

TACHOMETER . . Three range electric, specified readings to 100,000 rpm.

Source: METRON INSTRUMENT CO.
432 Lincoln St., Dept. IEN, Denver 3, Colo.

Permanently lubricated

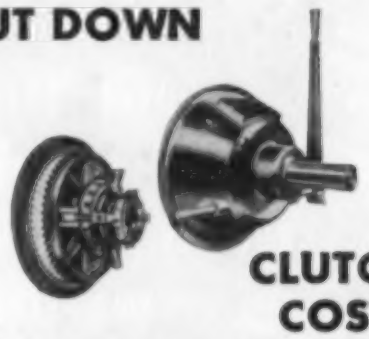
Type 26-A is a new hand held electric tachometer with a range selector that moves the dial scale, and an indicator reading the number of rpm. per scale division, to any one of three scale ranges. The pointer is operated by a small generator head connected electrically to the instrument. Current generated in the head is calibrated in terms of rpm.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN-1646

If you write maker identify as IEN-1647

CUT DOWN



CLUTCH COSTS

ROCKFORD clutch engineers are helping product designers reduce costs — by making possible *quicker clutch assemblies, easier clutch adjustments,* and *after-sale clutch service unnecessary.* Because ROCKFORD CLUTCH precision, capacity and stamina are greater than ever, product owners' upkeep costs are lower. Now is the time to have ROCKFORD clutch engineers give *your product* the benefits of lower clutch costs plus competitive operating advantages.

Send for This Handy Bulletin
Gives dimensions, capacity tables and complete specifications. Suggests typical applications.

ROCKFORD CLUTCH DIVISION
BORG-WARNER
301 Catherine Street, Rockford, Illinois

ROCKFORD CLUTCHES

If you write maker identify as IEN-1648

Curtis Terminal Blocks Make Better Connections Economically — Quickly. A type for every purpose.

CURTIS
Type "K" Blocks
with "lock-in" feature

– No Pull-Out
– No Drop-Out

The Curtis Type "K" offers several noteworthy features promoting convenient and safe wiring — (1) Note how the spade lugs actually lock in place — no pull-outs, (2) the "K" requires minimum space, (3) available in any number of terminals from 1 to 18, (4) a solid base insulates screw from base.

Write for Bulletin DS-114. Also ask about wide selection of other Curtis Blocks available.

CURTIS DEVELOPMENT & MFG. CO.
3214 North 33rd Street, Milwaukee 16, Wisconsin

If you write maker identify as IEN-1649

Best Buy in Hoists!

...and here's why!

1. Low operating cost.
2. Safe! The *only* hoist with self-locking, double worm gear which acts as its own load brake.
3. Steel from hook to hook—heavy, positive acting limit switches.
4. Dual voltage motors quickly convert from 220 to 440 volts or vice-versa.
5. Just hang it up, plug in, pull cord (one-hand control) and it goes to work.
6. Assured performance, backed by the exclusive Whiting Warranty Plan.
7. Most standard models shipped from stock.

WHITING
ELECTRIC CHAIN HOISTS

Send for Illustrated Bulletin H-112

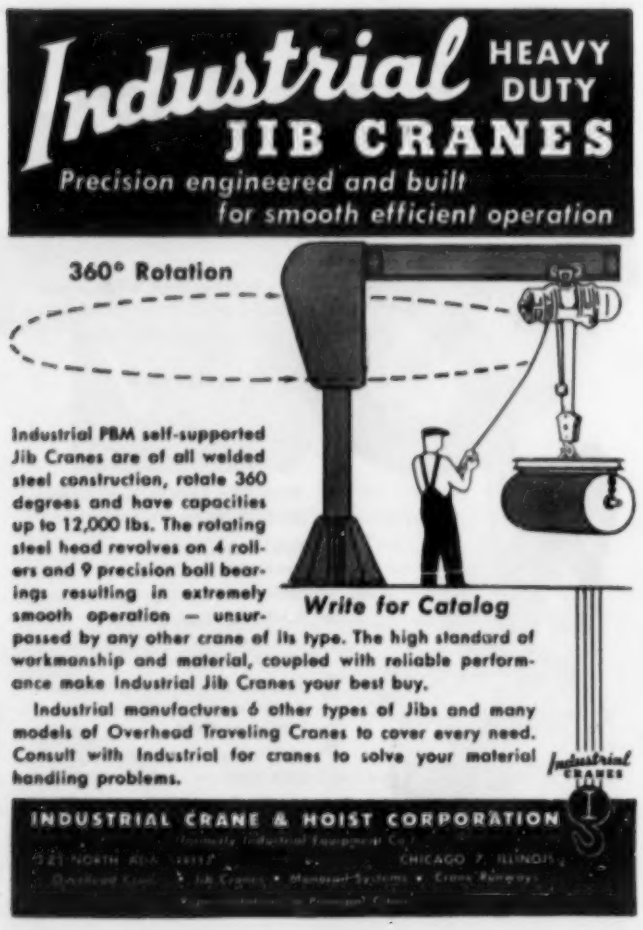
WHITING CORPORATION
15629 Lathrop Avenue, Harvey, Ill.

If you write maker identify as IEN-1650

McGILL MANUFACTURING CO., INC. 100 N. Lafayette St. Valparaiso • Indiana

If you write maker identify as IEN-1651

If you write maker identify as IEN-1652



If you write maker identify as IEN-1653

CONTROL . . Photoelectric unit opens and closes outdoor light circuit

Source: GENERAL ELECTRIC CO. Dept. 6X-201, Schenectady 5, N. Y.

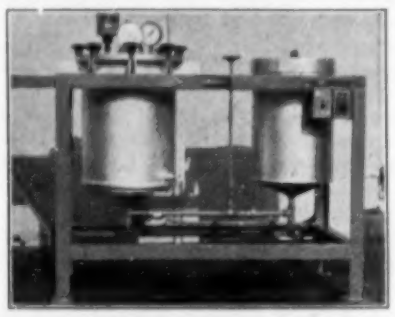
Light actuated

Low level illumination control for street lighting circuits and high level for airports and signs is provided by two types of this new photoelectric unit. One type can be converted to the other by the addition of a phototube shield. Load rating is 575 or 3,500 watts, sufficient for application of series or multiple outdoor lighting circuits. **Adjustments** can be made for operation at light levels between 1 to 6 or 10 to 60 foot candles at the "skyview" of the phototube. When the shield is used it permits maximum light from the sky to strike the phototube while minimizing stray light from surrounding sources. Phototube life is about 20,000 hours. The amplifier tubes will operate for 10,000 to 20,000 hours. Construction features a dip soldered etched circuit that permits the use of a soldering iron for replacement of any component part.

If you write maker identify as IEN-1654

SEALING . . Impregnating tank to fill voids in electric equipment

Source: HIGH VACUUM EQUIPMENT CORP. 347-51 Lincoln St., Hingham, Mass.



Removable top

Jacketed tank for vacuum and pressure is combined with a reservoir in a structural frame in this new impregnating equipment. The tank is jacketed for operation at temperatures to 300 deg. F. Electric elements within the jacket provide the heat source. A built-in vacuum unit draws air from the tank. Controls admit the impregnating fluid when the air has been withdrawn. Pressure can then be applied to force the material into the products enclosed in the tank. Typical application is in the impregnation of rotors, stators, condensers, capacitors. The equipment is available in specified sizes.

If you write maker identify as IEN-1655

Appearance is improved and characters stand out distinctly in dark locations on the new silver colored steel stamps known as Safaloy. Pittsburgh Stencil & Tool Co., Scotland & Reesdale Sts., Dept. IEN, Pittsburgh 12, Pa., is the manufacturer.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN-1656

If you write maker identify as IEN-1657

If you write maker identify as IEN-1658

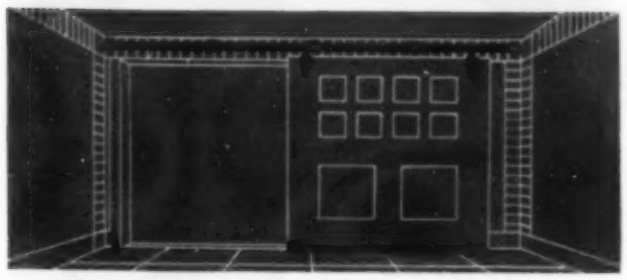
If you write maker identify as IEN-1659

If you write maker identify as IEN - 1660

COBURN

SLIDING DOOR HARDWARE

smooth, easy operation . . . trouble-free life for both new and remodeling jobs



For additional information, write to Sales & Engineering, 56 Sterling Street, Clinton, Mass. or consult your classified telephone directory.

THE COLORADO FUEL AND IRON CORPORATION—Denver and Oakland
WICKWIRE SPENCER STEEL DIVISION—Atlanta • Boston • Buffalo
Chicago • Detroit • New Orleans • New York • Philadelphia

2007

COBURN PRODUCTS
PRODUCTS OF WICKWIRE SPENCER STEEL DIVISION
THE COLORADO FUEL AND IRON CORPORATION

If you write maker identify as IEN - 1661

Safety for Overhead Jobs

HI-REACH PLATFORM TELESCOPER

Model PUL

THREE STANDARD MODELS

No. 1—Platform lift 10'9"		$305.00
No. 2—Platform lift 11'9"		315.00
No. 3—Platform lift 15'0"		340.00

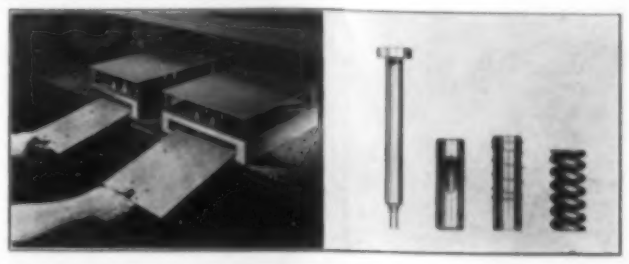
Equipped with 5" diameter base wheels
Rubber-tired wheels $8.00 extra
F.O.B. Chicago
Other models with platform lift up to 95'
Write for complete specifications.

ECONOMY ENGINEERING COMPANY
4502 West Lake Street, Chicago 24, Illinois

If you write maker identify as IEN - 1663

PRESS TOOLS . . Punch and die parts for multiple set-up in retainer plates

Source: WALES-STRIPPIT CORPORATION
361 Payne Ave., North Tonawanda, N. Y.



No aligning required

Die sets for multiple hole punching can be made with the aid of a drilling machine with this new assembly of retainer plate, springs, box frames, punches, dies, sleeves and stripper springs. Holes are located and drilled from a master template or pattern and the punch and die parts are inserted.

The retainer plate is bolted at the corners on its supporting springs so the punches cannot fall out. The complete assembly can be placed on a press bed without need for mechanical connection. Work is inserted as shown in the illustration. The frames provide work clearance measuring 6 by 24 inches. Larger sizes are available to order.

If you write maker identify as IEN - 1664

WATER PROOFING . . Powder for concrete and mortar, also hardens

Source: DELRAC CORPORATION
132 Mill St., Dept. IEN, Watertown, N. Y.

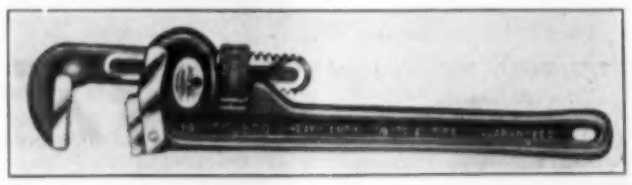
Technical data in Bulletin 201

Delrac Densment dissolves in water for addition to a concrete or mortar mix. The solution controls the hardening time of concrete, makes it dense, hard and water proof. It makes mortar fat and strappy and of correct troweling consistency. The plaster will be smooth, hard and water proof.

If you write maker identify as IEN - 1665

WRENCH . . Forged steel handle and head, for pipe, 6 to 48 in. sizes

Source: TOLEDO PIPE THREADING MACHINE CO.
1445 Summit St., Dept. IEN, Toledo 4, Ohio



Carries unconditional guarantee

Easy acting nut, single spring for quick jaw setting, forged steel handle and head characterize the construction of this new pipe wrench. A scale is integral with the head shank to assist in setting the wrench for a given size of pipe. The handle is painted red.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 1666

DICKERMAN LEADS AGAIN . . .

FIRST

NO OTHER FEED — AT ANY PRICE — OFFERS ALL THESE PRODUCTION INCREASING ADVANTAGES!

NEW MEEHANITE CASTINGS
Massive frame of virtually indestructible meehanite makes the new Model K the strongest hitch feed ever built.

LONGER FEED LENGTH
Extra frame strength allows full 2½" feed length on stock up to 5" in width.

CARBIDE GRIPPER PLATES
Carbide gripper and wear plates are standard on this new, rugged, versatile feed.

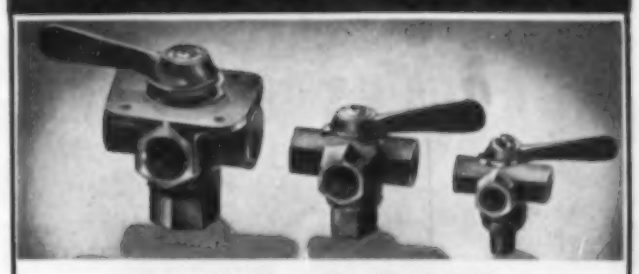
A great, new addition to the Dependable Dickerman line — a feed that will outlast almost any die — trouble free, accurate — day in — day out operation speeds production and actually cuts parts cost up to 60%.

Send for LITERATURE and CATALOGS on the complete line of Dickerman MONEY-MAKING FEEDS.

Dickerman
H. E. DICKERMAN MFG. CO.
324-317 Albany St. • Springfield, Mass.

If you write maker identify as IEN - 1667

KOHLER PRECISION CONTROLS



PLUG VALVES for Industrial Applications

Kohler Plug Valves have a stainless steel plug, precision lapped into a forged aluminum body—and are furnished with two, three or four ports, with or without mounting flanges, and with two or three way drilled plugs.

They will meet all your lower pressure installation and operating specifications.

Write us regarding your next precision control requirements. We'll send information to help solve your design or production problem.

Kohler Co., Kohler, Wisconsin. Established 1873

KOHLER OF KOHLER
PLUMBING FIXTURES • HEATING EQUIPMENT • ELECTRIC PLANTS
AIR COOLED ENGINES • PRECISION CONTROLS

If you write maker identify as IEN - 1668

CUTS PLATE ¾" x 10'-0"
(OTHER SHEARS FOR PLATE TO 20'-0")

THE LAST WORD IN SHEARS

No other shear is like Steelweld. No other shear has its many features. It is the last word in metal-cutting machines.

Consider: (1) Fatigue-reducing electric foot control; (2) Fast, easy Micro-Set Knife adjustment which enables smooth accurate cutting of all thickness metals; (3) Convenient front-adjusting back gauge; (4) Trouble-free mechanical hold-downs; (5) All-welded, rigid one-piece steel frame; . . . and many more advantages that make operation easy and assure top performance.

Built for all thickness metals to one inch and lengths to 20'-0".

STEELWELD Pivoted-Blade SHEARS CATALOG No. 2011

Send for free copy of catalog No. 2011.

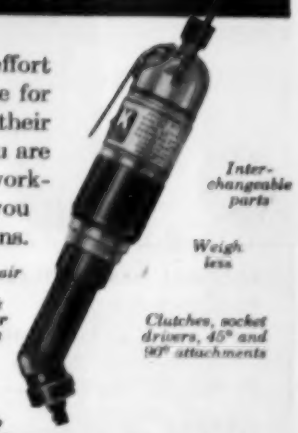
THE CLEVELAND CRANE & ENGINEERING CO.
4232 East 282nd Street, Wickliffe, Ohio

STEELWELD SHEARS

If you write maker identify as IEN - 1669

Less Fatigue More Production WITH KELLER AIR TOOLS

Less expenditure of physical effort means more energy available for intelligent workers to "use their heads." When they know you are providing the *best* air tools, workers are better satisfied—and you have improved labor relations.



K KELLER TOOLS

Send for **illustrated descriptive bulletin and detailed information**

Keller Tool Company
GRAND HAVEN, MICHIGAN

If you write maker identify as IEN-1670

IT'S EASY TO NUMBER with

HERCULES HOLDERS

Reg. U. S. Pat. Off.

marks Flat, Concaved or Convexed Surfaces

AND Shoulder Style Steel Type

Hercules "shoulder style" Heavy Duty Steel Type is made *extra body strength* for long service in stamping metal parts, castings, etc.

NEW FEATURE

By using "pie-shaped" fillers in-between straight line type, standard Hercules type can be used for marking on convexed, curved or concaved surfaces.

Write for details.

The ACROMARK Company

7 MORRELL ST., ELIZABETH 4, N. J.

"THE ORIGINAL MARKING SPECIALISTS"

If you write maker identify as IEN-1671

Are You Looking For A Valve to Stand Services Like These ?

Then Write to

ROCKWELL!

Take a quick look at these services:

ACETIC ACID	LINSEED OIL
ALCOHOL	LYE
AMMONIA	NAPHTHALENE
BEER	PHENOL
BUTANE	SODIUM CHLORIDE
CARBON DIOXIDE	STYRENE
FREON	SULPHURIC ACID
GAS	TAR
GLYCERINE	VEGETABLE OILS
LACQUER	WATER

These and dozens of other industrial services are readily controlled by Rockwell-Nordstrom lubricant-sealed valves. These valves use lubricant, not only for easier turning and longer life free from abrasion, but also as a leak-proof seal. Write for catalog with service recommendations. All sizes, for any piping arrangement, iron, steel and corrosion-resistant alloys.

ROCKWELL MANUFACTURING COMPANY
Pittsburgh 8, Pa.

Please send me Rockwell-Nordstrom Valve Catalog V-217

Name_____ Title_____

Company_____

Street_____

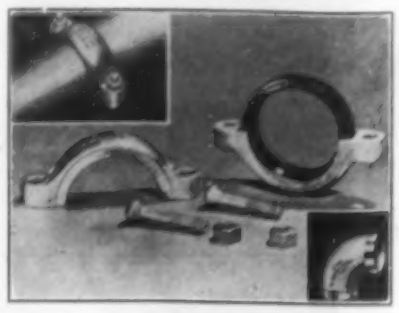
City_____ Zone____ State_____

Canadian Licensee: Peacock Brothers Limited

If you write maker identify as IEN-1673

PIPE FITTING . . Clamp type coupling and fittings for grooved aluminum pipe

Source: GUSTIN-BACON MFG. CO.
210 W. 10th St., Dept. IEN, Kansas City 6, Mo.



Synthetic rubber gaskets

Gruvagrip trade names a new clamp type gasket equipped coupling with grooved elbows, tees, caps and nipples to join aluminum pipe, also grooved to match the coupling. Sizes are 2, 4, 6 and 8 inches. Application is in pipe installations requiring light weight and high pressure rating.

The coupling permits expansion and contraction. It absorbs shock and vibration. It compensates for ground movement and permits mis-alignment to three degrees. Operating temperature range is from minus 65 to plus 200 deg. F. The fittings can be used in permanent or temporary lines carrying air, gas, chemicals, water, oil under pressure or vacuum.

If you write maker identify as IEN-1674

GRINDING . . Disc type wheel for weld removal, cut-off, slotting

Source: CARBORUNDUM COMPANY
1942 Buffalo Ave., Dept. IEN, Niagara Falls, N. Y.

Foundry tested

Carboflex Depressed Center is a new type of disc type grinding wheel that combines good cutting action with high strength and resistance to cracking. The wheel employs a resin bond reinforced with glass fiber. It is available in 7 and 9-in. diameters and in ⅛, 5/32 and ¼-in. thickness. It takes a ⅞ in. arbor.

Grading A24-R-BC is recommended for use on metals. Grading C24-R-BC is for non-metallic materials. The wheel will cut off fins and sharp edges. It will notch and cut off gates and risers. It will remove burned sand from the surfaces of castings.

If you write maker identify as IEN-1675

Lubricating holes in parts such as engine blocks, crankshafts, cam shafts, connecting rods, can be plugged to prevent chips from entering them while machining operations continue by using the hard wax cylindrical slugs manufactured by Tap-Cartridge Company, 10167 Springfield Pike, Dept. IEN, Cincinnati 15, Ohio. The slugs were developed originally, IEN-12077-45, for insertion into holes in work to be threaded. In this original application the wax acts as a lubricant and assists in picking up chips and carrying them out of the hole as the threading operation proceeds. In the new use, to seal the lubricating holes, the slugs are left in place. They melt and disappear when the work is hot dipped. Sizes range from No. 0 to 1 inch.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN-1676

Ton-Grip Made It Famous...

...VERSATILITY Made It Grow!

No. 10-W
$2.60

VISE-GRIP WRENCH

Vise-Grip's powerful toggle action makes it the speediest all-purpose wrench, pliers, clamp or hand vise you can find. As ADAPTABLE as these pictures show! 7" and 10", only $1.85 to $2.60 at your supplier.

ALSO
- VISE-GRIP C-CLAMP $2.95
- VISE-GRIP Sheet Metal Tool..... 2.95
- VISE-GRIP Welding Clamp..... 2.95

MANUFACTURED ONLY BY

PETERSEN MFG. CO., DEPT. IEN-2, DE WITT, NEBR.

If you write maker identify as IEN-1677

FABRICS & TAPES For ALL INDUSTRY

FLIGHTEX FLIGHTEX FABRIC FABRICS

- GLASS
- COTTON
- VINYON
- DYNEL
- ORLON

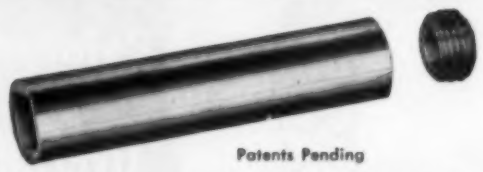
If you use special industrial fabrics and mechanical tapes, you'll find Flightex a dependable source of supply. Our staff of engineers is at your service to help solve your fabric and tape problems.

Write for Complete Information

FLIGHTEX FABRICS, Inc.
91 Worth Street New York 13, N. Y.

If you write maker identify as IEN-1678

How SQUARE HOLED SLEEVES SPEED UP TOOL-MAKING!



Patents Pending

One of the most difficult problems in tool making can be solved easily and quickly with Sturdy Square Holed Sleeves. The perfection of broached square holes can be had in boring bars, milling cutters and many other applications at a small fraction of the cost of imperfect hand-made square holes. The sturdy Square Holed Sleeve consists of a round sleeve with a perfectly square hole broached through the center. This hole is tapped at one end to receive a back-up screw which is furnished with the sleeve. The sleeve can be sweated or pressed into a drilled and reamed hole to make a perfectly square accurate hole in a very few minutes.

The sturdy Square Holed Sleeve will save you many hours and many dollars in the making of boring bars, tool holders and other tools requiring square holes.

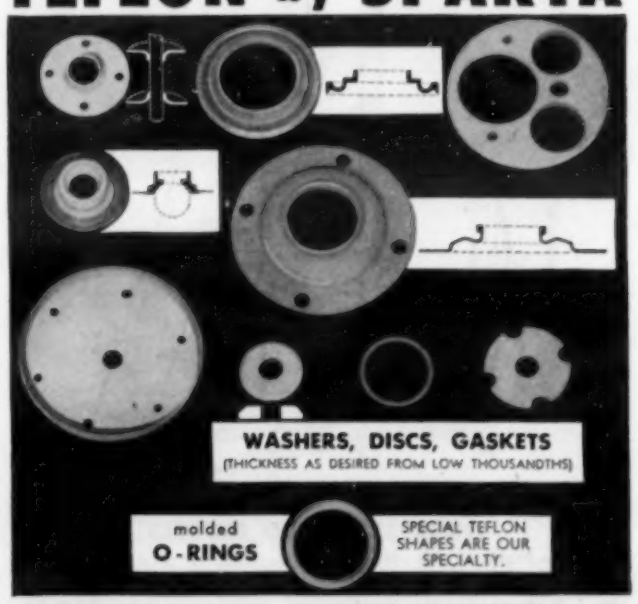
SLEEVES MADE IN FOLLOWING SIZES:
3/16", 1/4", 5/16", 3/8", 7/16", ½", ⅝", ¾", 1"

Write for Literature

STURDY BROACHING SERVICE
23516 TELEGRAPH ROAD • DETROIT 19, MICH.

If you write maker identify as IEN-1679

TEFLON by SPARTA



If you have a problem concerning sealing, non-friction, non-adhesion, chemical inertness, temperature, electrical or other . . . that one or more of the remarkable combinations of properties of TEFLON can help you solve, let us try to help.

SPARTA HEAT TREAT CO. — PLASTICS DIVISION, EAST SPARTA, OHIO
PHONE EAST SPARTA 5651 (CANTON, OHIO EXCHANGE)

If you write maker identify as IEN-1680

CLEANS METAL PARTS
BETTER • FASTER • CHEAPER

NEW LOW COST BENCH MODEL **JET BLAST**

BENCH MODEL JET BLAST
Other sizes are available

DISTRIBUTORS:
A few territories are still open.

SAVES UP TO 60% IN LABOR COSTS

JET BLAST REMOVES Rust, scale and Foreign Deposits from Dies, Molds, Tools or other precision articles without dimensional alterations. Increases adherance and bonding qualities of paint, porcelain, rubber, electroplated metals and a host of other materials . . . Equally effective for cleaning threads for close, smooth fit.

JET BLAST will give any desired finish on flat or irregularly shaped objects . . . Sharp edges are retained.

JET BLAST is excellent for light burring on hard to-get-at surfaces.

JET BLAST materially increases tool life when used for honing cutting faces after grinding . . . Eliminates costly hand labor.

JET BLAST IS A TOOL ROOM NECESSITY

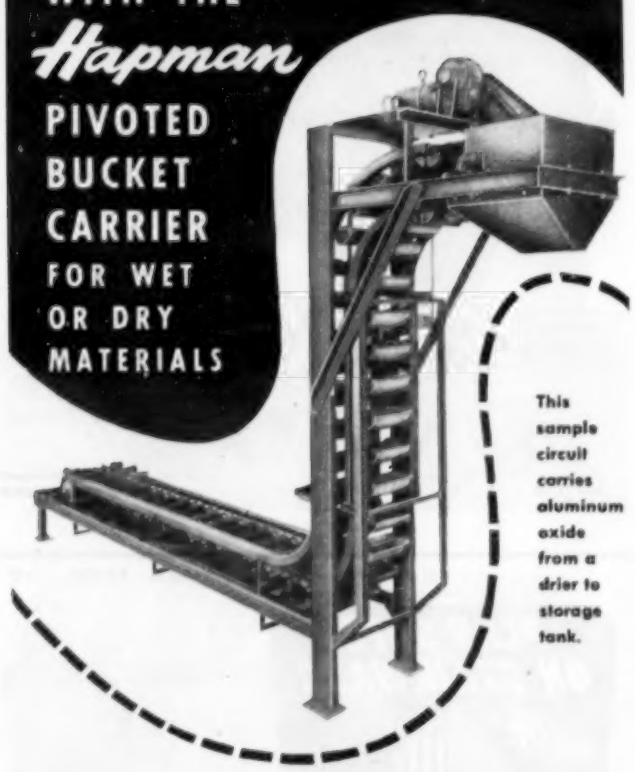
SEND FOR BULLETIN

R·W·RENTON and Company
877 ADDISON ROAD • CLEVELAND 3, OHIO

If you write maker identify as IEN-1681

HERE'S HELP!

GAIN UNIQUE ADVANTAGES WITH THE *Hapman* PIVOTED BUCKET CARRIER FOR WET OR DRY MATERIALS



This sample circuit carries aluminum oxide from a drier to storage tank.

MANY CIRCUIT LAYOUTS POSSIBLE—HANDLES FRAGILE CRYSTALS, LUMP OR POWDERED MATERIALS

One of *your* tough problems in materials handling may be happily solved by the *unique* patented features of this Hapman Carrier design.

Circuits of many types can be built . . . to carry fragile crystals, corrosives, abrasives and other "problem" materials . . . at speeds to 60′ per minute—100 tons per hour. Design permits *gentle* automatic top-loading—automatic unloading and unusually long life.

There's *much more* that may interest you—
WRITE FOR PIVOTED BUCKET BULLETIN IN-254

Hapman CONVEYORS, INC.
DIVISION HAPMAN-DUTTON COMPANY
KALAMAZOO MICHIGAN

If you write maker identify as IEN-1683

HANDLING . . Magnesium ramp makes roadway from ground to flat car

Source: MAGNESIUM COMPANY
5222 Indianapolis Blvd., East Chicago, Ind.

Piggy-Back railroading

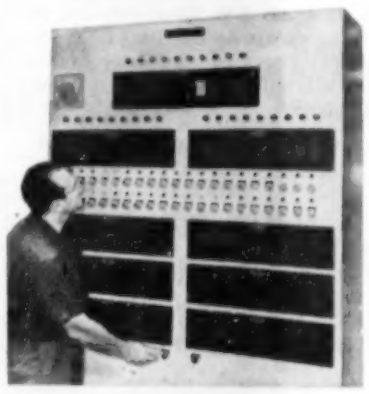
Traileramp is a new magnesium ramp to assist in movement of highway trailers on and off flat cars in the new combination of road and railroad movement of fast freight. The new unit measures 45 ft. in length by 9 ft. in width with a flare to 11 ft. at ground level. It weighs 4,800 pounds.

Raising and lowering is by a manually operated hydraulic pump. Anchor stakes fit into pockets at the end of a flat car. When the ramp is not in use, it rides balanced on rubber tired wheels and is equipped with a detachable tow bar for connection to a standard tractor. Curbs 9 in. in height, prevent run-off and excessive tire wear when the trailers are moved on or off the car.

If you write maker identify as IEN-1684

SIGNALING . . Sequence annunciator emphasizes initial off-normal alarm

Source: PANALARM PRODUCTS INC.
6310-14 N. Broadway, Chicago 40, Ill.



Push button reset

That variable which causes a sequence of variables to go "off-normal" is emphasized by automatic lock out of subsequent signals or by causing the first signal to be red and subsequent signals white in this new annunciator equipment. The assembly is recommended for use where alarms are applied to inter-related variables in which it is difficult to determine the one that goes off normal first and actually causes a shutdown. It is also suited for dangerous processes where operators must be certain that the entire process has shut down when trouble occurs.

The equipment is available in standard back lighted nameplate cabinets providing from 3 to 48 signals grouped for sequential lockout by jumper connections at a rear terminal block. Contacts, relays and other moving parts are sealed hermetically in plug-in units so additional signals can be added through the common chassis.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN-1685

Keep Dirt and Moisture Out of AIR TOOLS and STEAM USING EQUIPMENT

Write for your FREE COPY

ANDERSON Hi-eF PURIFIERS

• Protect Air and Steam Equipment for Life
• No Messy Filters • Fully Automatic

For your copy of Bulletin 501 write
V. D. ANDERSON COMPANY
1966 West 96th Street • Cleveland 2, Ohio

If you write maker identify as IEN-1686

HYDRO-SHEAVE® Drives Protect Pumps...

● Shaft and gear failures on sanitary pumps can be *eliminated* by slipping a HYDRO-SHEAVE Drive on the motor shaft. Twin Disc Double-Circuit design *absorbs* sudden shocks and overloads—*softens* both stops and starts—*protects* both pump and motor. Call your nearby Authorized Twin Disc Hydraulic Dealer.

A leading food processor solved shaft and gear failures on this filling machine pump with Model 9.5 HYDRO-SHEAVE Drive on his 10 hp. 1750 rpm motor.

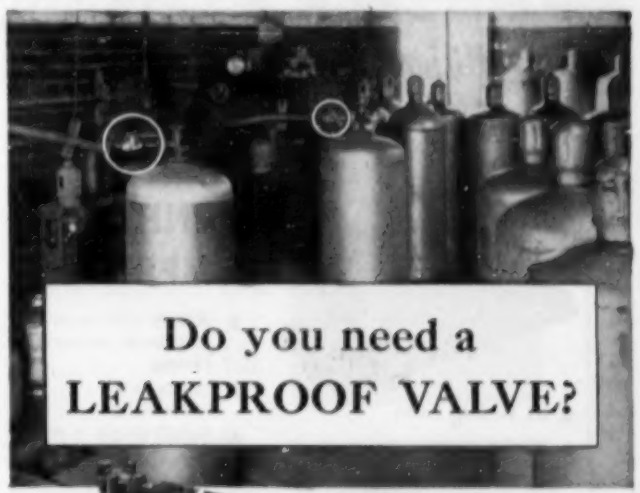
TWIN DISC

TWIN DISC

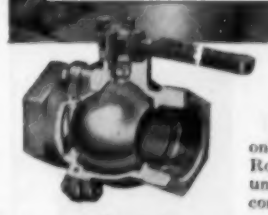
TWIN DISC CLUTCH COMPANY, Racine, Wisconsin • HYDRAULIC DIVISION, Rockford, Illinois

BRANCHES: CLEVELAND • DALLAS • DETROIT • LOS ANGELES • NEWARK • NEW ORLEANS • SEATTLE • TULSA

If you write maker identify as IEN-1687



Do you need a LEAKPROOF VALVE?



Patented

"Far ahead of any others we have used," says maintenance engineer of this propane plant.

Leakproof in a propane plant — *leakproof* on LP gas trucks — *leakproof* in a tannery — Rockwood Ball Valves are designed to operate under the roughest and most grueling of conditions. What are *your* conditions?

Remember, they're leakproof for a longer time, too — pay for themselves over and over during years of rugged service.

Other features — full, round flow; quick opening and closing; extra *wear* resistance. Tested and listed by Underwriters' Laboratories Inc. Write for complete details. It may pay you big dividends.

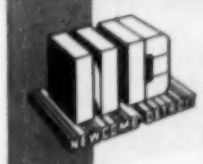
ROCKWOOD SPRINKLER COMPANY
40 Harlow St., Worcester 5, Mass.

ROCKWOOD FULL-FLOW BALL VALVES
THE FLOW IS AS ROUND AS THE PIPE ITSELF

If you write maker identify as IEN-1688

NEWCOMB-DETROIT

PIONEERS IN ENGINEERING, MANUFACTURING & INSTALLING OF



INDUSTRIAL OVENS
•
SPRAY BOOTHS
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PARTS WASHERS
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DUST COLLECTORS
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HEAT and AIR SYSTEMS

ESTABLISHED 1912
• DETROIT DIVISION
• GRAND RAPIDS DIVISION
• NEWCOMB INDUSTRIES, LTD., WINDSOR DIVISION

For Bulletins and Quotations, Wire, Write or Call—
NEWCOMB-DETROIT
5757 Russell St., Detroit 11, Mich.
TR 3-2100

If you write maker identify as IEN-1689

specify

CAL-WIC MESH CLOTH

You'll find CAL-WIC Mesh Cloth available in a wide variety of weaves, weights and meshes . . . fabricated in various types of metals and alloys for resistance to corrosion, abrasion, or high temperatures.

For original equipment or replacement, investigate the advantage of "precision-made" CAL-WIC Mesh Cloth. Write for further information.

THE COLORADO FUEL AND IRON CORPORATION — Denver and Oakland
WICKWIRE SPENCER STEEL DIVISION — Atlanta • Boston • Buffalo
Chicago • Detroit • New Orleans • New York • Philadelphia

CAL-WIC
INDUSTRIAL SCREENS
THE COLORADO FUEL AND IRON CORPORATION

1954

If you write maker identify as IEN-1690

Here's Efficient, Dependable Air Supply

JOY WL-80
"UNITAIR" COMPRESSOR

★ 81 to 640 CFM
★ Two Stage . . . Air cooled
★ A size for *every* standard motor rating
★ Force-feed lubrication
★ Small floor-space requirements

And here's FREE HELP!

Bulletin A-56 . . . new, with 16 fact-filled pages and a Selector Chart. Write for it to select the right compressor for your needs.

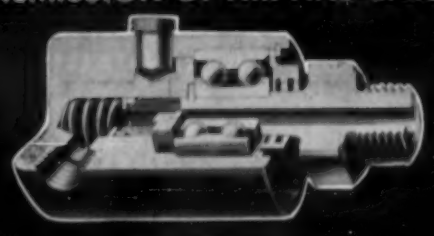
Consult a Joy Engineer

W&D 13066

JOY MANUFACTURING CO.
General Offices: Henry W. Oliver Building
Pittsburgh 22, Pa.
IN CANADA: JOY MANUFACTURING CO. (CANADA) LIMITED
GALT, ONTARIO

If you write maker identify as IEN-1691

FAWICK ROTORSEAL
PROVIDES TROUBLE-FREE
TRANSMISSION OF AIR AND LIQUIDS



If your machine problem requires the transmission of air or liquids from stationary to rotating machine members, a FAWICK ROTORSEAL will provide the trouble-free, practical answer.

Precision-made ROTORSEALS are available in either single or multiple passage units, producing an absolute sealing of air, liquids, or gases under pressure. They are equally effective in vacuum applications. Thousands of installations have proved the high efficiency of FAWICK ROTORSEALS.

FAWICK AIRFLEX DIVISION
FEDERAL FAWICK CORPORATION
9919 CLINTON ROAD
CLEVELAND 11, OHIO

Write for ROTORSEAL Bulletin ML-6.

FAWICK Airflex
INDUSTRIAL CLUTCHES AND BRAKES

For Your Special Information

ALL MAKERS ARE LISTED — IEN S-1

This little piece is directed to you who have ordered the 1954 issue of Thomas' Register and expect to use it during the year to find sources for the things you need in your plants and products. You will benefit most if you will study the four volumes a bit, and the fifth volume containing the index, before trying to put them to work. Pick a subject or two and check for sources in the listings and the trade name sections. Pick a few company names and some trade names and look for them. Study the instruction pages in each of the volumes.

We have seen many instances in which the users of the Register have spent this preliminary study time to excellent advantage. By doing so they obtain a picture of the whole setup of the Register and the relation between its component parts. It is a complex job to find and list all makers of all products in the United States. If you understand the overall arrangement you can use the books to find anything you need. We hope you will let us know if you have any questions.

OUR YEAR END LETTER — IEN S-2

We have been busy assembling the information you gave us on our year-end letter. Particularly we are impressed by your multiple-function interests as you have checked them. We want to let you know that we are on the job and we want to thank you for your help in checking the letter and your comments and suggestions. We will report more fully when our part of the job is completed.

EVERYONE CAN HELP — IEN S-3

"Phooie on talk of a recession", says Samuel E. Gold, Sales Manager for Lignum-Vitae Products Corporation. "Get everyone . . . and I do mean everyone . . . in the plant . . . in every department . . . in the office . . . , as well as in the field, to become sales minded. It's contagious. It spreads. It helps develop business. Follow through and you'll have good business in 1954."

Best U. S. Investment:
United States Savings Bonds

Americans now hold $36 billion in Savings Bonds. Sales last year of E and H Bonds provided cash for all E and H maturities and redemptions and left $210 million net to reduce the bank-held debt.

If you write maker identify as IEN-1692

how to SOLVE your
LOW-CAPACITY
FLOW CONTROL
problems

BULLETIN 1053

Here's a new and improved bulletin on Air-Powered Controlled Volume Pumps . . . your guide to precise flow rate control of low-capacity chemical and slurry streams.

It's fact-filled . . . gives you operating principles, tables, applications, features and designs, examples of complete Milton Roy engineered chemical feed systems.

Solve your low-capacity flow control problems. Send for your free copy of Bulletin 1053, now.

MILTON Roy COMPANY
1302 E. MERMAID LANE
PHILA. 18, PA.

CONTROLLED VOLUME PUMPS ARE FLOW CONTROL INSTRUMENTS

If you write maker identify as IEN-1693

Problem:
How To Seat More People

Answer:
SICO System

Industry's overcrowded cafeterias and working areas cannot seat increasing numbers of people by adding ordinary tables. The best solution to the problem is *more* space—the kind of space possible with portable SICO Tables and Bench Service. SICO units seat more people with more comfortable leg and elbow room than any other practical system—increasing comfortable seating capacity by 33% in some rooms!

Durably constructed of tubular steel, SICO units feature tough, wear-resistant tops. . .complete portability . . . simple folding and unfolding action without pinching fingers, toppling over or marring floors.

There is a SICO System unit to suit almost every industrial seating need.

For further information, call or write today to . . .

Seating Inc. 6045 Pillsbury Avenue South, Minneapolis 19, Minnesota

If you write maker identify as IEN-1694

Modernize your communications . . . without batteries

U. S. I. SOUND POWERED TELEPHONES

Write TODAY
FOR THIS CATALOG

Write Dept. D for Catalog

If you write maker identify as IEN-1695

PLAY SAFE ON STAIRWAYS with BIL-JAX MAINTENANCE TRESTLE

It's easy to bridge stairways, terraces, curbings and other obstacles with Bil-Jax maintenance trestle. Work platform is always level . . . always safe!

Ball-bearing casters (locking type) make it easy to maneuver. Patented. U. L. Approved. Distributors in principal cities. Write for catalog.

Address Dept. L-2

OTHER BIL-JAX EQUIPMENT
Steel Scaffolds, Swing Scaffolds, Putlogs Ladders, Hoisting Towers for sale or rent.

West Coast: 216 W. Los Feliz Rd., Glendale, Calif.
Export Office: 80 Broad St., New York 4, N. Y.

GETS YOU UP IN THE WORLD
BIL-JAX INC. Archbold, Ohio

If you write maker identify as IEN-1696

NEW...SAVES MONEY IN HIGH BAYS

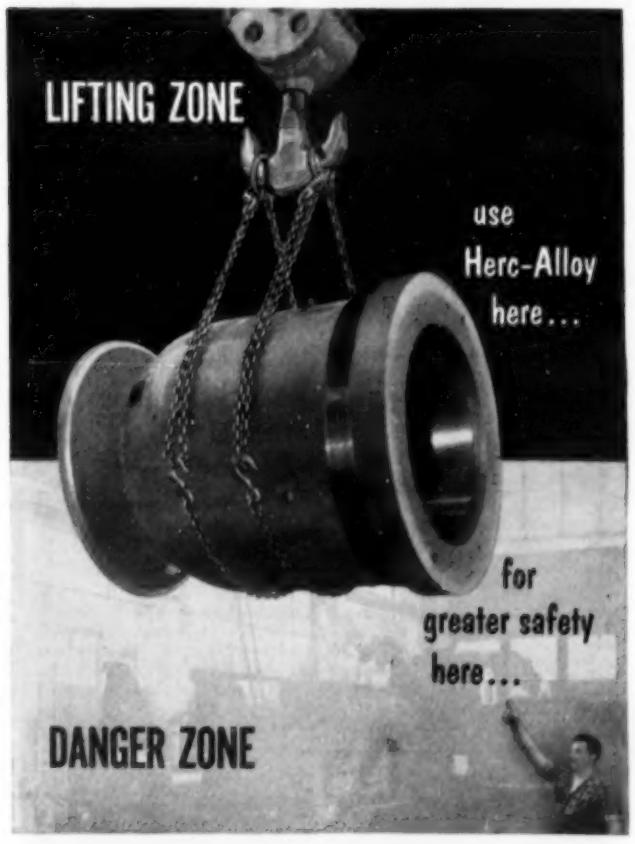
Amplex R-57 lamp never needs cleaning despite smoke and dust

AMPLEX R-57 LAMP is designed for continuous maximum light output in high bays. Its unique shape and *pure silver*, sealed-in reflector abolish all need for cleaning and for auxiliary reflectors . . . grime and dust never obscure the under surface from which light is projected. Available in 500 and 750 wattages. Save money! Write for full facts. **Amplex Corporation, Dept. X-2 111 Water St., Brooklyn 1, N. Y.**

AMPLEX

Incandescent, Fluorescent, Sealed-Beamed Reflector, Infra-Red, Rough Service, Mercury Vapor, Photoflash, Street Lighting and Traffic Signal Lamps, Swivelites, Hi-Hats and Display Lighting Accessories.

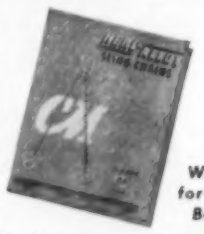
If you write maker identify as IEN-1697



SPECIFY

HERC-ALLOY

SLING CHAINS



Write for Data Book

Hundreds of plants like the one shown above* are using Herc-Alloy Sling Chains. Greater safety is their big reason for doing it. But there are other factors too. Herc-Alloy is economical because of its long service life. Then too, the use of alloy steel permits a weight reduction that helps prevent worker fatigue. These advantages are worth thinking about. Those who do consider them seriously generally adopt safe Herc-Alloy Sling Chains for their plants.

HERC-ALLOY Sling Chains are made-up to order, are individually tested, registered and guaranteed.

*LAKE ERIE ENGINEERING CORPORATION — MANUFACTURER OF HYDRAULIC PRESSES

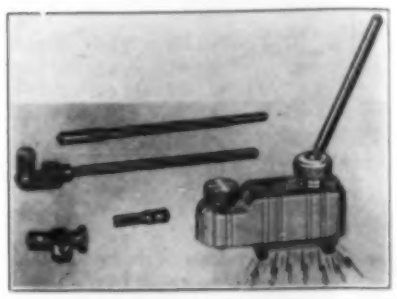
COLUMBUS McKINNON CHAIN CORPORATION
TONAWANDA, NEW YORK
DISTRICT OFFICES: NEW YORK, CHICAGO, CLEVELAND

In Canada: McKINNON COLUMBUS CHAIN LTD., St. Catharines, Ont.

If you write maker identify as IEN-1699

MAGNET . . Permanent magnet base and arm to position gage on a machine

Source: ENCO MFG. CO.
4520 W. Fullerton Ave., Chicago 39, Ill.



List is $15.50

Tiny-Titan No. 150 is a new design of the company's permanent magnet base, extension arm and fittings, previously described IEN-11086-53. The unit has sufficient holding strength to mount a test indicator measuring 3 in. in diameter to a flat surface or to one measuring ¾ in. or more in diameter. Actual pull, in contact with a flat ferrous surface is 125 pounds.

The ball swivel on the base is made of brass. The stem is non-magnetic to isolate the magnet from the indicator. A knurled lock nut secures the arm in desired position. The assembly includes a three-step universal rod, 6 in. in length and in three end diameters to take any size indicator.

If you write maker identify as IEN-1700

BALLS . . Hardened alloy steel in 0.0138 to 0.0886 in. diameters

Source: LANDIS & GYR INC.
45 W. 45th St., Dept. IEN, New York 36, N. Y.

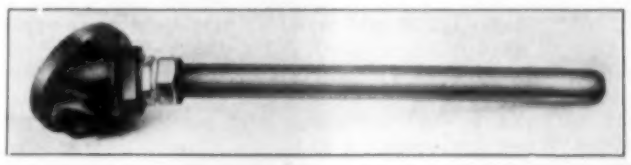
Diameter tolerance
0.000012 inch

The company announces availability of RMB miniature chrome steel precision balls, SAE 52100, in 15 sizes ranging from 0.0138 to 0.0886 in. in diameter. Fractional sizes of 1/64, 1/32 and 1/16 in. are included. The balls are packed in 5,000 to 50,000 lots, depending on size. Minimum package is 100 balls per vial.

If you write maker identify as IEN-1701

THERMOCOUPLE . . Protection tube, metal ceramic design, 12 to 24 inches

Source: BRISTOL COMPANY
107 Bristol Road, Waterbury 20, Conn.



Specifications in Bulletin P1261

Wall thickness is ⅛ in. to minimize lag in temperature response to the thermocouple mounted inside this new protection tube. The material in the tube has thermal conductivity about the same as cast iron. It also has strength at high temperature and is resistant to oxidation, combustion gases and attack by molten steel and slag. Three lengths are 12, 18 and 24 inches. The unit is available as a complete thermocouple assembly or as the tube and head fitting only.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN-1702

If you write maker identify as IEN-1703

SAFELY LIFTS 13.9 to 25 TONS

With reserve strength beyond its rated capacities, Koehring heavy-duty 304 safely lifts 13.9 tons on crawlers, has 35 to 75-ft. boom. As a rubber-tired truck or cruiser crane it lifts up 25 tons, has max. 110-ft. boom with jib. Big clutch and spring-loaded brake automatically hold boom with max. load. Other sizes to 79½ tons.

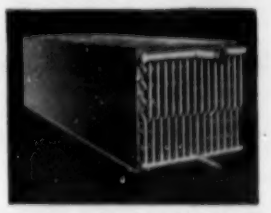
KOEHRING CO.
Milwaukee 16, Wis.

If you write maker identify as IEN-1704

Tube Talk THE "HOW-TO" COLUMN

PROBLEM: To find tubing of high and uniform quality for heat exchanger coils used in industrial coolers made by Marlo Coil Company. Coils handle ammonia and brine, but—most important—they are subject to very severe fabricating operations.

SOLUTION: Superior Carbon Steel Tubing (Analysis MT1015) for coils. ⅝" O.D. x .035" wall.



RESULT: Since adopting Superior tubing, quality has been consistently high. Size is uniform, tolerance is close, tubing is free from defects after bending and welding.

Suggestion—Write for information and literature today.

SUPERIOR TUBE COMPANY
2016 Germantown Ave., Norristown, Pa.

If you write maker identify as IEN-1705

CUTTING COSTS WITH ALLMUL

"B&W ALLMUL Firebrick lasts 6 times longer"

Semi-mullite brick bungs in the hottest part of a butt welding furnace spalled badly after six weeks. Allmul bungs in the same location were still going strong after 39 weeks—in better condition than the semi-mullite bungs after six weeks. Yet Allmul cost little more than the original semi-mullite refractory. As a result, Allmul is now used in uptake arches, uptake side walls and crossovers.

Bulletin R-29 gives all the facts on B&W Allmul. Write for your copy.

THE BABCOCK & WILCOX CO.
Refractories Division
GENERAL OFFICES: 161 EAST 42nd ST., NEW YORK 17, N. Y.
WORKS: AUGUSTA, GA.

If you write maker identify as IEN - 1706

APPLY GLUE 30% FASTER

direct from original containers!

Air operated Versatal Pumps can save up to 30% of labor costs in handling glue by delivering material direct from original containers to point of application.

Versatal Pumps end troublesome handling, transferring, old-fashioned and expensive methods of application. Save time, work, money!

Each pump serves up to six outlets. Pressure sends adhesives through as much as 1,000 feet of hose or pipe.

FREE! A book of ideas on how Alemite Versatal Equipment can help solve your material handling problems. Write: Alemite, Dept. B-24, 1830 Diversey Parkway, Chicago 14, Illinois.

If you write maker identify as IEN - 1707

TINY DIE-CASTINGS cut small parts cost

Small zinc die-castings—1000 per lb. to 3 per lb.—made at high speed on special automatic machines. Method combines design latitude of die-casting with the speed of fully-automatic processes. Possibilities to users: cut piece costs . . . consolidate two or more parts into one . . . reduce machining operations. *Small Parts Folder and Samples* on request.

DOLLIN CORPORATION
630 So. 21st St., Irvington 11, N. J.

If you write maker identify as IEN - 1708

SHAFT-MOUNTED SPEED REDUCER Easy to install as a standard pulley!

This time-tested idea in speed reducers cuts installation and operating costs. The Shaft-King mounts directly on the shaft of the driven machine, runs on any power source, requires no foundations or supports, no engineering to install, remove or relocate. Made in 13:1 and 20:1 ratios for horizontal and vertical mounting. With American Wedgbelt Drives it covers a range of speeds from 154 RPM down, and power requirements through 40 HP.

Write today for the Shaft-King Catalog. Shaft-King companion products: Backstops; Overload Releases; Wedgbelt Econ-O-Matic Drives.

If you write maker identify as IEN - 1709

DRIVE . . Variable pitch sheave operates centrifugally as a clutch

Source: LIGHT INSPECTION CAR WORKS
Box 186-E, Dept. IEN, Hagerstown, Ind.

About $8 to $17

New size, known as Model 18C20, for a 1-in. shaft, has been added to the company's V-Plex line of variable pitch sheave type clutches, previously described IEN-11166-50. The new unit is suited for use on gasoline engines to drive powered mowers, garden tractors, motor scooters, elevators, pumps. Engagement speed ranges from 1,800 to 2,500 rpm. depending upon the belt load. Release occurs at 1,200 rpm. The sheave takes a B-size V-belt. Overall diameter is 2⅞ inches.

Four parts make up the assembly. They include the cover with a brazed shaft sleeve, a centrifugal element with a garter spring, a floating cone against which the element acts, and a fixed cone that forms the outside flange of the sheave. The floating cone rides the sleeve and is rotated by engagement between embossed keys in the sleeve and its own keyway. Increase in speed expands the element, moves the floating cone toward the fixed cone to increase effective pitch diameter of the driving sheave.

If you write maker identify as IEN - 1710

TRUCK . . Engine driven fork lift for outdoor yard duty, rates 2 ton

Source: BAKER-RAULANG COMPANY
1250 W. 80th St., Dept. IEN, Cleveland 2, Ohio

Rates 122 in. lift

High clearance, large pneumatic tires and an oscillating trail axle suit this truck for use over uneven ground surfaces. Travel speed to 14 mph. permits it to cover large yard areas.

Drive is by a Case gasoline engine. The engine also drives a hydraulic gear type pump to supply oil under pressure to the lift and tilt cylinders. Speed of both movements is controlled by the engine speed. Overall length, without the forks, is about 100 inches with overall width at 50 inches. Wheel base measures 55 inches. Turning clearance is 92 inches. List price is $2,985.

If you write maker identify as IEN - 1711

Skylift Model-HF electric trucks, in ratings of 1 to 2 ton, are available now in construction that meets approval by Underwriters' Laboratories for use in locations involving fire and explosion hazards. Each such truck will carry the Type-EX label for use in locations covered in Class 1, Group D, Division 1.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 1712

If you write maker identify as IEN - 1713

New inert-gas-shielded water-cooled AIRCOSPOT Gun welds stainless and mild steel sheet from one side only, without jigs or back-up plates! Nine-inch-long manual Gun weighs only four pounds. Fully automatic welding cycle:—simply set controls, touch Gun to work, and pull trigger. Current, gas and water connections made through single convenient control panel. Operates on 250-amp. DC with 55-volt open circuit voltage.

Write today for free pamphlet that gives complete specifications and operating data.

AIRCO

AIR REDUCTION
60 East 42nd Street • New York 17, N. Y.
Air Reduction Sales Co. • Air Reduction Magnolia Co.
Air Reduction Pacific Co.
Represented internationally by Airco Co. International
Divisions of Air Reduction Company, Incorporated
Offices and Dealers in Most Principal Cities
at the frontiers of progress you'll find

If you write maker identify as IEN - 1714

A.C.M.I. BORESCOPES

for close-up visual inspection of internal surfaces and hidden parts

A.C.M.I. Borescopes are available in 4 angles of vision (as above)—in diameters of .120" to 4.00"—in lengths of 4" to 720". Special models for special problems.

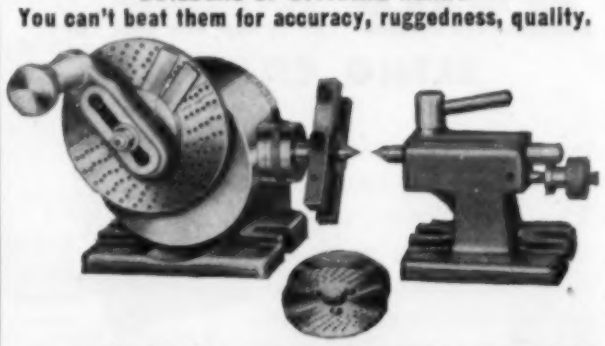
A.C.M.I. Borescopes permit close-up visual examination of interior areas and surfaces not otherwise visible. They save time and money, and prevent costly dismantling. • Each Borescope is a compact, self-illuminated industrial telescope of highest quality, employing a precision optical system, that produces a flat visual field. Lens systems are fully corrected for color, spherical aberrations, and coma, with all lens surfaces coated to increase light transmission.

Write for free informational folder, or tell us your problem.

American Cystoscope Makers, Inc.
1241 LAFAYETTE AVENUE NEW YORK 59, N. Y.

If you write maker identify as IEN - 1715

OUTSTANDING VALUES BY AMERICA'S LARGEST BUILDERS OF DIVIDING HEADS
You can't beat them for accuracy, ruggedness, quality.



L-W Model SD 6½" Swing DIVIDING HEAD

Spindle Threaded 1½"-8 to fit L-W 5" Universal Chuck

• ACCURATE • RUGGED • 36 LB. • QUALITY CONSTRUCTION Only **$132.00**

Heavy duty headstock and tailstock designed for maximum rigidity. Alloy steel threaded headstock spindle with extra large tapered bearing and takeup adjustment collar. Head tilts to 90° in vertical position. Alloy stress-proof steel worm and accurately cut worm wheel cut to close limits for accuracy. Ball bearing thrust and adjustable for end play. Complete with three index plates for dividing all numbers to 50 and even numbers to 100, except 96T. Index chart shows all divisions obtainable to 380. Right or left hand models.

Model BP 11 inch Swing for plain milling machines. Shipping weight, 140 lbs. $225.00

Model AU 11 inch Swing. Fully Universal for complete indexing and spiral cutting. Shipping weight, 190 lbs. $327.50

Order from your industrial supply distributor or order direct, giving name of your distributor.—Immediate Delivery.

Send for complete catalog giving prices and specifications on these quality, low-cost L-W Products

L-W CHUCK COMPANY 41 SO. ST. CLAIR ST. TOLEDO 4, OHIO

If you write maker identify as IEN-1716

LARGE SAVINGS

on pilot run and short-run stampings

Yes, it *is* possible—but it's a special skill of ours.

It's done with a new price-slashing method of making dies, used in conjunction with special machinery. In other cases we use custom equipment for die-less duplication by our own Machine-Cut Method.

FOR EXPERIMENTAL OR PRODUCTION REQUIREMENTS at rock-bottom prices, send us your blueprints. And make sure you get our latest, fact-packed literature.

STAMPINGS DIVISION

"ONE PIECE OR ONE MILLION"

LAMINATED SHIM COMPANY, INC.

2102 UNION STREET • GLENBROOK, CONNECTICUT

If you write maker identify as IEN-1717

Look To The Leader For Lubricating Devices

GITS

40 Years' Leadership

Yes, for 40 years GITS has been setting the standard for industry... solving tough lubricating problems...earning the confidence of manufacturers . . . it's the reason people say, "Call GITS first".

Low Cost

Yes, GITS oil cups can do a complete lubricating job for you . . . prolonging bearing life, reducing maintenance costs, cutting down-time, boosting production . . . and GITS oil cups cost so little.

World's Largest Selection

Yes, only GITS can offer you such a wide range of standard stock sizes. From *just one* source you can get *all* lubrication devices in *any design* for *any purpose.*

Consistent Top Quality

Yes, GITS is known for uniform quality in design, materials and machining . . . this means constant, dependable performance for you. Inferior products can cost you time and money. Demand the best . . . get GITS.

Write Today for **FREE CATALOG** *No. 60 A*
Use it as your handy reference for lubricating devices

Oil Hole Covers, Oil Cups, Grease Cups, Bottle Oilers, Gauges, Gravity-Feed, Wick-Feed, Constant Level, Vibrating Rod Styles. Threaded or Drive-Type, Elbow or Straight.

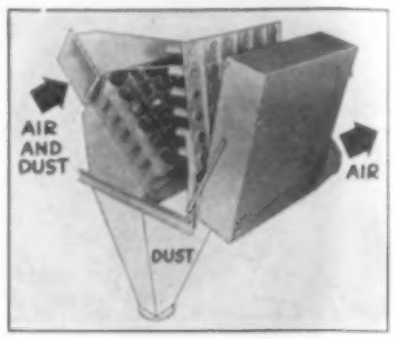
GITS BROS. MFG. CO.

1854 S. Kilbourn Ave. Chicago 23, Ill.

If you write maker identify as IEN-1719

DUST COLLECTING . . Multiple cyclone separates dust or mist from air stream

Source: DUSTEX CORPORATION
1756 Walden Ave., Dept. IEN, Buffalo 25, N. Y.



Bulletin on request

New design of the Microclone collector, previously described IEN-11389-50, employs a hinged outlet hood and cover for access to inspect and clean the multiple separator units on the interior. Operation remains the same as it was in original design in which air and dust are directed into the curved inlets where centrifugal force throws the dust to the walls of the inlet elements so it will drop down to the collector chamber at the bottom. The clean air moves upward, through the center, in outlet tubes in the main air outlet.

The collector is available in 27 standard models for required volume from 70 cfm. up. The tubes and body can be specified in cast aluminum, carbon steel or stainless steel depending on the type of dust to be handled. The company offers to run a determination test without cost at your plant to obtain data as the basis for its recommendations.

If you write maker identify as IEN-1720

MARKING . . Indelible ink, made in colors, will not wash out

Source: DRIFLO MFG. CO.
640-44 E. Ten-Mile Road, Hazel Park, Mich.

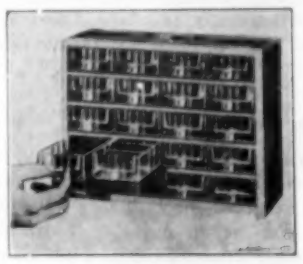
Three years in test service

Twelve colors are available in the company's new indelible ink for use in color coding to identify materials such as fabrics, paper, metal, fiber, plastics. The ink is not subject to attack by water, steam, solvents, bleaches, alkalis. It is resistant to attack by soaps, detergents, hydrocarbon solvents. Packaging is in pints, quarts and gallon containers.

If you write maker identify as IEN-1721

STORING . . Steel cabinet holds 20 transparent plastic drawers

Source: GENERAL INDUSTRIAL CO.
5738 N. Elston Ave., Dept. IEN, Chicago 30, Ill.



About $8

Small parts are held in visible safe storage for quick access by this new Model J-20 See-Thru cabinet. The steel housing measures 12½ by 6 by 10¼ inches. The drawers measure 2¾ by 5⅞ by about 1½ inches. Cabinet finish is silver gray hammer design. Mounting is on rubber feet. Adjustable drawer dividers and identification labels are included.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN-1722

See How To
SAVE TIME AND SPACE
in Die Assembly

CAP SCREWS AND STRIPPER BOLTS

Easy-to-grip knurled socket head permits quick finger driving with minimum wrench tightening. Key-type socket facilitates quick "drawing-up" in awkward locations and allows more compact assembly. Precision machined . . . high-grade alloy steel . . . heat treated for optimum hardness and strength.

Send For This *FREE* Bulletin Today!

DANLY MACHINE SPECIALTIES, INC.
2100 South Laramie Avenue • Chicago 50, Illinois

If you write maker identify as IEN-1723

HERE'S REAL GRIP!

GRAY PERFECTION FRICTION TAPE

Only the strongest, heaviest fabric is used and the rubber is forced into it to insure thorough impregnation, strongest type of adhesion—without soft tack. Will not dry out. *Exceeds* all accepted specifications.

CHECK YOUR STOCKS. ORDER FROM YOUR DISTRIBUTOR!

Product of U.S. RUBBER SERVING THROUGH SCIENCE

UNITED STATES RUBBER COMPANY
MECHANICAL GOODS DIVISION • Rockefeller Center, New York 20, N. Y.

If you write maker identify as IEN-1724

General Plate TRUFLEX®

THERMOSTAT METALS

Fit Into Your Product Picture

for Temperature Reaction, Accurate Performance and Economy!

General Plate *Truflex* Thermostat Metals and Fabricated Assemblies can cut your costs and give you reliable performance in your products requiring temperature control, indication or compensation.

Advanced General Plate production methods coupled with the best equipment available insure positive consistency in thermal and mechanical performance, and in maintaining close dimensional tolerances, hardness, etc. Every lot, whether it is 10 or 10,000, is a duplicate of the original, thus eliminating rejects and costly adjustments in assembly.

General Plate *Truflex* fabricated assemblies are engineered and manufactured to your specifications, ready for installation into your products. They eliminate costly fabrication problems . . . needless special equipment costs . . . experimental and assembly adjustments.

For you who desire to manufacture your own parts, *Truflex* Thermostat Metals are available as strip in coils or flat cut lengths.

It will pay you to investigate General Plate Truflex Thermostat Metals for your requirements. Write for engineering assistance and catalog.

METALS & CONTROLS CORPORATION
GENERAL PLATE DIVISION
72 FOREST ST., ATTLEBORO, MASS.

If you write maker identify as IEN-1725

THIS light-weight HEAVY-DUTY MAGCOA DOCKBOARD IS

A BETTER INVESTMENT—*here's why*

There are three reasons why this is the perfect Dockboard for *this* installation. (1) It is the exact length required for *this* car-to-dock span, with proper allowance for car width variations. (2) The dock end of the board is flared just enough for use on *this* narrow dock, permits part of the turn to be made while the truck is on the board. (3) It is built for weight requirements of *this* company's handling equipment and loads, with a margin of safety to spare.

Your dock is different and your local Magcoa Representative knows it. He's a loading dock expert—thorough and quick in fitting a Magcoa Dockboard to your specific needs. Then mass-production specialists at the Magcoa factory take over. Result: a light-weight HEAVY-DUTY Dockboard that solves your specific problems, quickly . . . and permanently.

Safety, Service, Facts—Quarter-round safety curbs, one-piece hand holds and the other Magcoa safety and efficiency features make your Dockboard safe, permanent equipment. You get Magcoa Service, too, if abuse or misuse puts your Dockboard out of operation. Our free new **Facts File** gives you all the facts. It's yours for the asking.

MAGNESIUM COMPANY OF AMERICA
MATERIALS HANDLING DIV. • EAST CHICAGO 14, IND.

If you write maker identify as IEN-1726

Type 631-BL STROBOTAC®: $150

All STROBOTACS NOW Equipped With Extra SLOW SPEED RANGE

The popular Type 631-B STROBOTAC®, the G-R stroboscopic tachometer and motion-studying instrument, has a calibrated range of 600 to 14,500 rpm. In many applications it was necessary to use the STROBOTAC with machines running at less than 600 rpm. For some time a special slow-speed Type 631-BL STROBOTAC has been available. This instrument has the standard calibrated range of 600 to 14,500 rpm and an *additional* range of 60 to 1450 rpm, selected by a switch.

The Type 631-BL STROBOTAC has had such wide acceptance that we announce that now ALL STROBOTACS will be of the 631-BL Slow Speed type.

Now! The STROBOTAC will stop motion or permit its slow speed analysis over the enormous range of 60 to 100,000 rpm.

For Complete Information, Write For NEW Stroboscope Bulletin

GENERAL RADIO Company 275 Massachusetts Ave. Cambridge 39, Mass.

90 West St. NEW YORK 6 920 South Michigan Ave. CHICAGO 5 1000 North Seward St. LOS ANGELES 38

If you write maker identify as IEN-1727

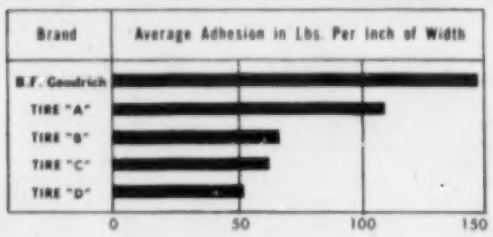
B.F.Goodrich

FREE TIRE AND WHEEL TW ANALYSIS can cut your tire maintenance costs 20% or more

TIRE maintenance costs cut 20%. Total tire costs lowered as much as 50%. Such savings have been reported by industrial tire users across the country through the use of the B. F. Goodrich Tire and Wheel Analysis Plan! Simply contact your BFG retailer or mail the coupon below. Without cost or obligation a trained B. F. Goodrich man will analyze your materials handling operations and make recommendations which will cut your tire and maintenance costs. A special TW Analysis is available for industrial equipment manufacturers.

DO YOU HAVE THIS PROBLEM? Poor adhesion of rubber to steel caused this tire to fail prematurely. The chart below, based on extensive comparison tests of leading makes of tires, proves the superior adhesion qualities of B. F. Goodrich solid industrial tires.

Tests Prove B. F. Goodrich Adhesion Best



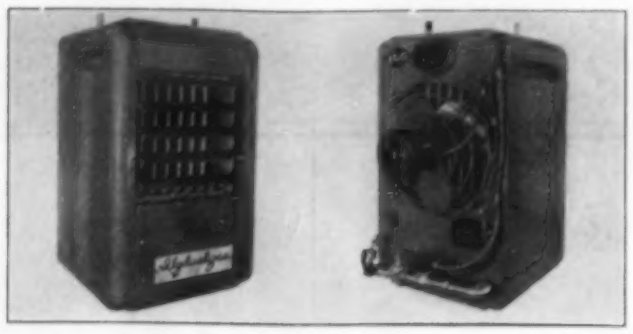
The B. F. Goodrich Company
Tire & Equipment Division
Department TW-341, Akron 18, Ohio
Please send me:
☐ Additional information on your Tire and Wheel Analysis Plan
☐ Free copy of "Industrial Tire Guidebook"
☐ Free copy of "How to Get Extra Service Out of Solid Industrial Tires"
Name_____
Company_____
Street_____
City_____ Zone____ State____

Specify B. F. Goodrich tires when ordering new equipment

If you write maker identify as IEN-1729

HEATING . . Gas fired space unit in seven sizes to 200,000 btu. per hour

Source: ILG ELECTRIC VENTILATING CO. 2812 N. Pulaski Road, Chicago 41, Ill.



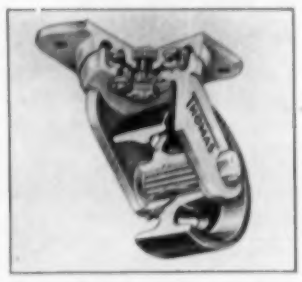
Bulletin 285

Capacities range from 25,000 to 200,000 btu. per hr. with maximum heat throw at 18 to 56 ft. in this new line of gas fired unit heaters. The gas burner fires into a combustion chamber made of welded steel and equipped with a draft diverter so back draft cannot put out the flame. A motor driven fan at the rear of the housing moves air between the tubes for delivery through directional louvers at the front. Trade name of the new line is Ilgdualgas. The unit can be mounted on a wall or suspended from a ceiling.

If you write maker identify as IEN-1730

CASTER . . Forged steel design, 5 to 8 in. wheel, load to 2,500 pounds

Source: THOMAS TRUCK & CASTER CO. Dept. IEN, Keokuk, Iowa



Bulletin Series 190

Swivel and rigid designs are included in the new Series-190 and 290 forged steel casters. Malleable iron wheels are mounted on Hyatt roller bearings. The swivel unit is equipped with a combination ball and tapered roller arrangement as shown in the illustration. A hardened steel inner bearing race, around the axle bolt and between the fork sides, results in an accurate wheel fit.

Overall height is 7, 8 and 10¼ inches. The plate measures 5¼ by 7¼ inches. Weight of the three sizes in swivel design is 19, 21 and 25 pounds. The rigid design weighs 16, 18 and 22 pounds.

The caster is available also with rubber tired wheels in which the rubber is molded permanently in place. Load capacity for the 6 and 8-in. wheel sizes is 570 and 700 pounds.

If you write maker identify as IEN-1731

The Port Huron-Marysville area of Michigan is described in attractive manner as a first-class place to build a plant, to live and to play, in a new bulletin "Packaged for Industry". If you would like a copy we suggest you write to Rolle R. Rand, Managing Director, Industrial Development Corp., 1109 Military St., Dept. IEN, Port Huron, Mich.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN-1732

LET US SHOW YOU HOW TO

CUT WAREHOUSING COSTS . . . as much as 75%

Paltier STORAGE SYSTEM

PALTIER records are filled with proof after proof of storage cost cuts in the handling of every conceivable type of product. We can cut your storage costs, too!

ASK US:
- PALTIER studies your storage problem—engineers and designs a system for your specific needs.
- Many PALTIER installations pay for themselves "right from the start."
- This booklet tells the PALTIER story, ask for it today.

THE PALTIER CORPORATION 1711 KENTUCKY ST. MICHIGAN CITY, IND.

If you write maker identify as IEN-1733

NOT TOO LITTLE... NOT TOO MUCH...BUT JUST ENOUGH COOLANT

FULFLO CENTRIFUGAL COOLANT PUMPS

COOL TOOLS do a better job . . . last longer . . . keep costs down while production goes up. Simplicity of construction and design . . . precision operation . . . everything goes right with

FULFLO PUMPS

MODEL FVM vertical
MODEL FHM horizontal
Flanged mounts; ¼ hp.; 30 gal. per min. mechanical seal.

Write on your letterhead for professional edition of FULFLO MECHANICAL DATA BOOK

Ask FULFLO engineers to help you on your coolant problems.

FULFLO THE FULFLO SPECIALTIES CO. Inc. BLANCHESTER, OHIO

If you write maker identify as IEN-1734

REDUCE YOUR COST OF RADIAL HOLE DRILLING

A Standard Machine Designed for Variety Production

Why build a special machine for drilling radial holes when a standard machine equipped with Govro-Nelson Automatic Drilling Units will, in many cases, perform the work of a special machine that would cost considerably more!

Any number of drilling units up to eight may be employed, the units being movable not only through 360 degrees on the circular table but also movable endwise on riser plates.

The machine may also be used for tapping operations with Govro-Nelson Tapping Units. It has a range of 1/32" to 3/8" on drilling operations and 0-80 to 3/8-16 on tapping operations, depending on material and spindle speeds.

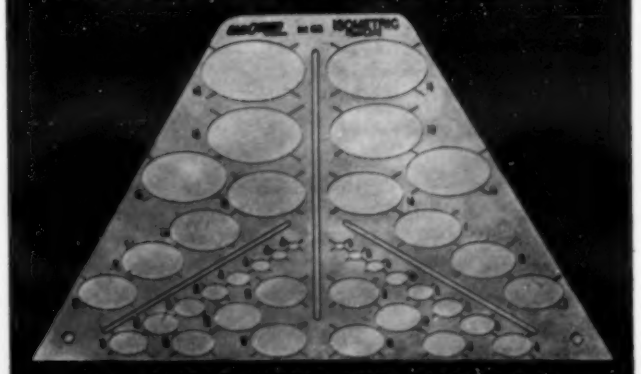
Literature on request.

GOVRO-NELSON CO. 1933 Antoinette DETROIT 8, MICH.

Automatic DRILLING UNIT

If you write maker identify as IEN-1735

NO. 123 ISOMETRIC TEMPLATE



ALL THREE AXES ARE AVAILABLE WITHOUT TURNING THE TEMPLATE

.040 clear mathematical quality double cured plastic. All cut-outs are smooth-milled to give engraving-machine accuracy.

One of more than 35 Rapidesign time-saver templates—all of which are better made, more useful and lesser priced.

$3.00 AT YOUR LOCAL DEALER

CATALOG No. 50 MAILED ON REQUEST

RapiDesign INC. BOX 592 GLENDALE CALIF.

If you write maker identify as IEN-1736

Manufactured by Brush Electronics Company under patent license from General Motors Corporation.

NEW—

MEASURES SURFACE ROUGHNESS

Here is a practical shop tool for measuring surface roughness—the BRUSH SURFINDICATOR*. The operator merely guides the pickup over the piece to be tested and then reads surface roughness in micro-inches on the meter. This instrument eliminates guesswork and expensive errors in surface finish control. A set of Precision Reference Specimens, which comply with A.S.A. and S.A.E. specifications, permit absolute calibration. Write for bulletin. Brush Electronics Company, Dept. II-2, 3405 Perkins Ave., Cleveland 14, Ohio. *Trade Mark

BRUSH ELECTRONICS COMPANY

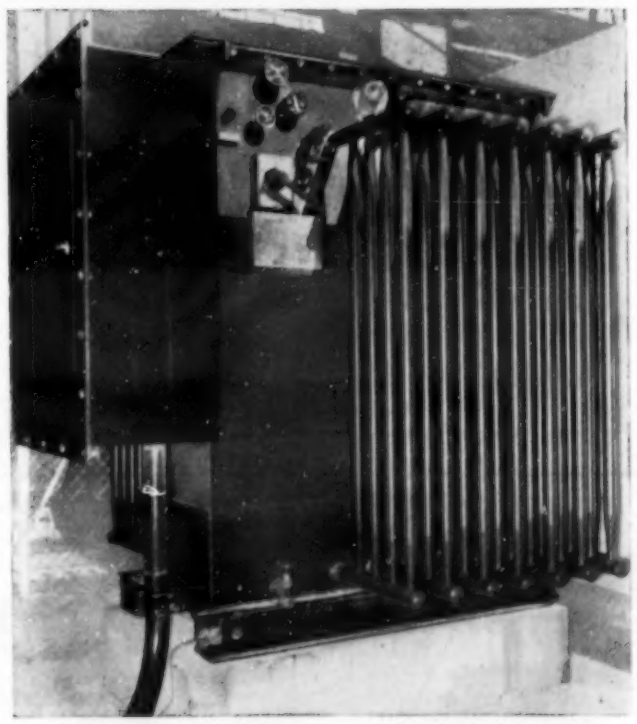
formerly The Brush Development Company. Brush Electronics Company is an operating unit of Clevite Corporation.

If you write maker identify as IEN-1737

UPTEGRAFF

Power Transformer

HELPS SPEED EXPANSION PROGRAM AT MAYWOOD CHEMICAL WORKS



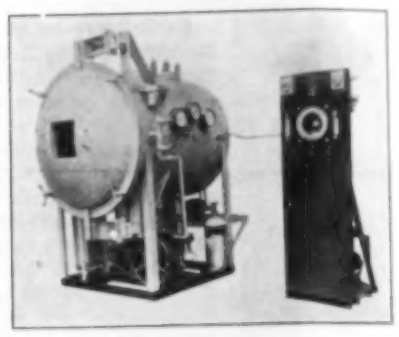
When additional electric power was needed to serve expanded facilities of the Maywood Chemical Works, Uptegraff was able to furnish the required type of transformer and meet the delivery deadline. The photograph above shows this transformer, a 750 KVA Power Unit, 4160 Grd.Y/2400—480 Delta Volts, 3 phase, 60 cycle. It includes provisions for adding thermometer controls to actuate cooling fans on radiators if needed for future load increase.

R. E. UPTEGRAFF MANUFACTURING CO.
SCOTTDALE, PENNSYLVANIA

If you write maker identify as IEN-1739

TESTING . . Explosion chamber checks equipment in gas atmosphere

Source: TENNEY ENGINEERING INC.
24-28 Avenue B, Newark 5, N. J.



Explosion invited

Equipment that might be injured by an explosion in its vicinity or that might cause an explosion in a dangerous atmosphere can be tested in this new cylindrical chamber. The standard unit is 4 ft. in diameter by 5 ft. in length. Construction includes apparatus to cause an explosion, control instruments, a vacuum pump to simulate altitudes to 80,000 ft., two 100-point terminal pads rated at 25 amp. on 220 volts and two hand turning shafts. The equipment under test can be operated within the chamber as it would be in normal use.

Valves, with remote control, admit bottled butane into the chamber and a blower circulates the gas. Control instruments close the valves when an explosive mixture exists. Then a spark plug circuit is closed to cause the explosion or the equipment is operated to see if it will set one off.

Two relief valves are located on top of the chamber to permit expanded gases to escape harmlessly. They close after the momentary high pressure is released. Springs hold them in normally closed position. The chamber remains sealed, after the relief valves close, so pressures and temperatures immediately following the explosion can be recorded. Internal pressures and temperatures are relieved by opening a scavenging valve which permits burned fumes to escape. The chamber door is gasketed for vacuum tests. A 12-in. window permits observation of the interior.

If you write maker identify as IEN-1740

GAGE . . Micrometer caliper with direct feel and friction thimble

Source: L. S. STARRETT COMPANY
100 Starrett St., Dept. IEN, Athol, Mass.

Number 231-F

The inner section of the thimble in this new micrometer is integral with the spindle to provide direct feel for the user as he brings the anvils into contact with a work piece. The outer end of the thimble provides a friction drive so the spindle will not advance after correct contact pressure has been applied. The new design provides the user with a choice of application methods on the work he is measuring.

Satin chrome finish is applied on the thimble sleeve and frame to eliminate glare and to resist stains and corrosion. The one piece spindle has rigid internal construction. The adjustable sleeve can be replaced if it becomes damaged or worn. Quick reading figures and tapered frame complete the assembly. Range is to 1 in. by thousandths or by ten thousandths.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN-1741

LOW COST, RUGGED
Hydraulic
SKID TRUCKS
for loads up to 1000 lbs!

- ★ HYDRAULIC RAISING & LOWERING
- ★ PUSHES OR PULLS
- ★ FLOOR PROTECTIVE WHEELS
- ★ ALL STEEL WELDED CHASSIS
- ★ LIGHT WEIGHT
- ★ COVERED STEEL PLATFORM USED AS PLATFORM TRUCK

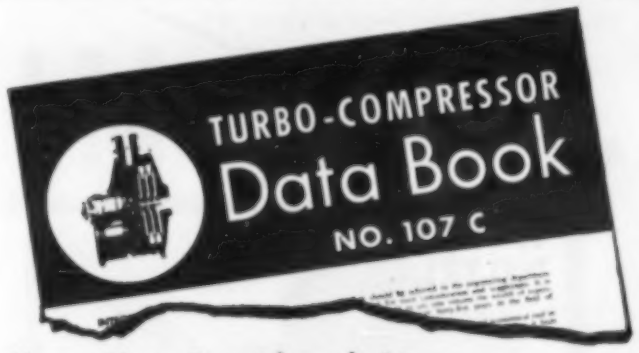
● Fully illustrated bulletin HST-19 describes this versatile truck in detail. Write for it today. Catalog GP-17 describing many standard Ironbound cost-saving units will be sent you without obligation, too.

IRONBOUND BOX & LUMBER COMPANY
50 Hoffman Place, Hillside, New Jersey

Ironbound — **IRONBOUND**

MANUFACTURERS OF QUALITY BUILT SKIDS, SEMI-LIVE SKIDS, FLOOR TRUCKS, SKID TRUCKS, ROLL TRUCKS, DOLLIES AND PRY BARS

If you write maker identify as IEN-1742



Have You Considered Air for the Following Uses?

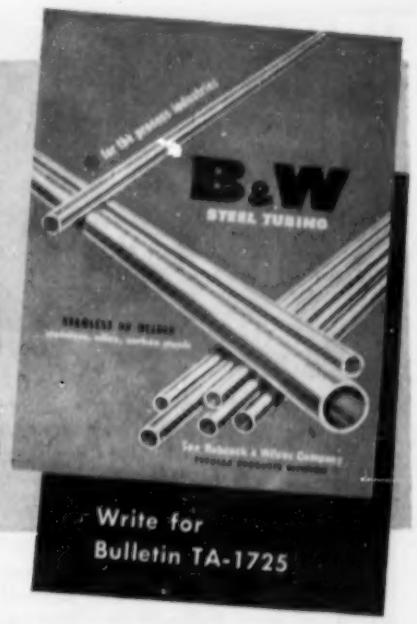
AIR CURTAINS . . . LIQUID REMOVING
HEAT TREATING . . . SCALE BLOWING
COOLING . . . SPRAYING . . . AGITATION
TESTING . . . DRYING . . . VENTILATING
HEAT TREATING

These and other applications are described in the Spencer Turbo-Compressor Data Book No. 107-C. Yours for the asking.

THE SPENCER TURBINE COMPANY • HARTFORD 6, CONNECTICUT
SPENCER HARTFORD
466-J

If you write maker identify as IEN-1743

FOR THE PROCESS INDUSTRIES



. . . informative bulletin on Carbon, Alloy and Stainless Tubing — Seamless and Welded. Gives listing of B&W Tubing Steels with Tubing Properties Chart.

TA-4000(LP)

THE BABCOCK & WILCOX COMPANY
TUBULAR PRODUCTS DIVISION
Beaver Falls, Pa.—Seamless Tubing; Welded Stainless Steel Tubing
Alliance, Ohio—Welded Carbon Steel Tubing

If you write maker identify as IEN-1744

SOLVE CORROSION PROBLEMS!

Select HARPER *Everlasting Fastenings*

Harper can supply corrosion-resistant fastenings to meet every need. Call Harper for bolts, nuts, screws, washers, rivets and special fastenings of brass, silicon bronze, naval bronze, Monel, aluminum, all stainless steels. Over 7,000 different items ready for prompt delivery. See your Harper Branch or Distributor or write for catalog.

HARPER
EVERLASTING FASTENINGS

The H. M. Harper Company
8211 Lehigh Avenue
Morton Grove, Illinois
Please send me Harper Catalog 25.

Name .....
Company .....
Address .....
City ..... State .....

If you write maker identify as IEN-1745

TROUBLE MAKER!

Tiny dust particles can cause trouble out of all proportion to their size . . . they create hazardous fire and explosion conditions; they clog and cause excessive wear to valuable machinery; they create unfavorable working conditions and often render the best laid community relations campaigns ineffective.

Effective dust control can eliminate all of these troublesome conditions. To get the facts on how you can determine the scope of your dust problem and the most efficient equipment for effective control, write for our new manual, "A Simplified Test Method for Dust Control Determination."

For your copy, just clip this ad to your company letterhead and sign your name and title.

dustex CORP.
1764 Walden Avenue
Buffalo 25, N. Y.

If you write maker identify as IEN-1746

New Delrac Coating Coats, Penetrates and Seals

Concrete, Masonry, Wood, Steel

Steel won't rust; concrete won't dust; wood won't rot when coated with Delrac Coating, the new all-purpose protective coating. It is fungus-resistant, water-repellent, weather-resistant—with excellent penetration and adhesion. Available in transparent, white and grey and can be tinted any desired color by user. Shipped in 1- and 5-gallon containers.

Write for Bulletin 100

DELRAC CORPORATION
132 Mill Street Watertown, New York

If you write maker identify as IEN-1747

ZIP OFF

SCALE
RUST
PAINT

with

AURAND CLEANING TOOLS

AURAND rotary chipping action quickly, easily, thoroughly removes scale, paint, rust and other accumulation from any hard surface. Renewable cutter heads and fool-proof cutting depth adjustment allow the unskilled operator to produce perfectly clean surfaces. Available in electric or pneumatic models. Write today for further information on cleaning your iron, steel, brick, concrete, and other hard surfaces.

Get the time and money-saving facts

GET THE TIME AND MONEY-SAVING FACTS WRITE TODAY TO DEPT. 649

AURAND MFG. & EQUIP. CO.
2643 Colerain Avenue • CINCINNATI, OHIO

If you write maker identify as IEN-1748

STORING . . Machinist's tool chest made of steel with cork lined drawers

Source: HUOT MFG. CO.
565 N. Wheeler St., Dept. IEN, St. Paul 4, Minn.

Safe tool protection

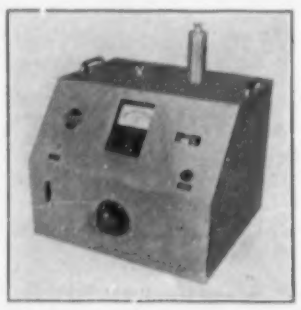
Cork liners on the drawer bottoms, in this new Model-104 tool chest, minimize corrosion and protect the tool edges against contact with the metal. A key applies in a lock on the front of the housing to release all of the drawers or to leave them locked and release the top only. The top is assembled with a piano-hinge. The exterior surfaces are smooth finish.

The top compartment measures 19½ by 8¼ by 5½ in. in height clearance. Four drawers measure 8¼ by 7¾ by 1 inch. Two drawers measure 8¼ by 7¾ by 2 inches. One drawer measures 17¼ by 7¾ by 2 inches. Overall dimensions are 19¾ by 8¾ by 13¾ inches. A carrying handle on the top completes the assembly.

If you write maker identify as IEN-1749

TESTING . . Resistance meter checks insulation to 30,000 volt ac.

Source: ASSOCIATED RESEARCH INC.
3762 W. Belmont Ave., Chicago 18, Ill.



Bulletin 573A Hypot

Leakage current, in a circuit under test, is indicated by a panel mounted neon lamp in this new Hypot Model 573A semi-portable insulation tester. The instrument operates on 110-volt ac. to provide a continuous variable ac. output ranging to 30,000 volts at 1 kva. Short circuit protection is provided by a manually reset primary circuit breaker with a secondary trip.

The output is read on a 4½-in. voltmeter connected across the secondary so the indication is not dependent on transformer design for accuracy. A high voltage stand-off insulator and ground terminal are mounted on top of the housing. An "on-off" switch is provided with a pilot light. A non-locking push-to-test button completes the assembly. Applications include testing motors, cables, transformers, insulators. Overall dimensions are 21 by 16 by 18 inches. Weight is 178 pounds.

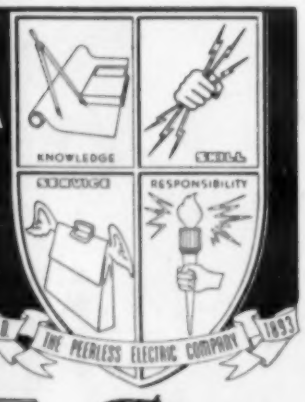
If you write maker identify as IEN-1750

Rempe Company, 340 No. Sacramento Blvd., Dept. IEN, Chicago 12, Ill., has installed equipment to fabricate finned or plain pipe coils of stainless steel to handle acids in cooling and heating processes. Fin type coils can be supplied gas tight. Plain open coils also are available, each to specification.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN-1751

Peerless
PREMIUM-BUILT ELECTRIC MOTORS



The **POWER** *that builds reputations.*

No greater compliment can be paid a motor than to call it Peerless. The men who build, sell and service America's finest mechanical equipment know what we mean.

"Service" by our representatives; "knowledge" of Peerless engineers; "skills" of its manufacturing personnel; and, "responsibility" of Peerless top management result in a motor with that extra something.

Yes, The Peerless Electric Company is proud to build motors with that extra something . . .

Something we call the Power That Builds Reputations.

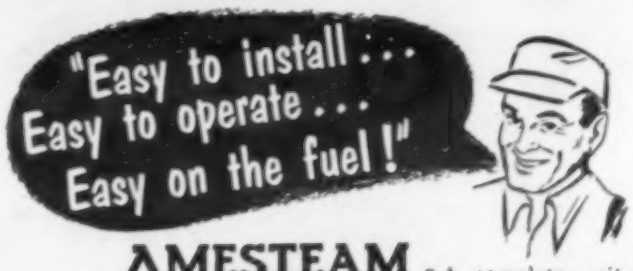
THE PEERLESS ELECTRIC COMPANY

MOTORS
FANS
BLOWERS

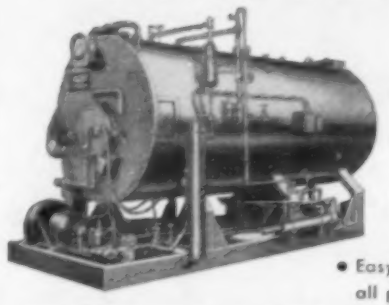
Peerless Electric

1415 W. MARKET ST.
WARREN, OHIO

If you write maker identify as IEN-1752

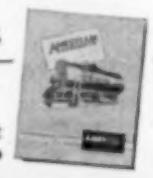


AMESTEAM GENERATOR



- A complete unit, piped and wired, ready for service connections.
- Needs no special foundation or expensive stack.
- Fully automatic . . . attention-free.
- 80% efficiency means real fuel savings.
- Easy to clean and service . . . all parts accessible.

20 SIZES — 10 to 600 h.p. — 15 to 200# OIL OR GAS



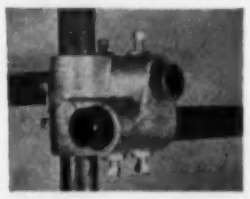
FREE BULLETIN!
WRITE FOR YOUR COPY
Complete engineering facts on the exact AMESTEAM GENERATOR to do your job and save you money. Write today!

AMES IRON WORKS
BOX E-24, OSWEGO, N. Y.

If you write maker identify as IEN-1753

MAKE YOUR OWN
ADJUSTABLE SCAFFOLDS and MATERIAL RACKS

WITH
AMIDON FITTINGS



AND STANDARD PIPE
PICTURES AVAILABLE
AMIDON ENGINEERING CO.
ELYRIA 14, OHIO

If you write maker identify as IEN-1754

CUT YOUR SWEEPING COSTS

WILSHIRE
POWER SWEEPERS

Free DEMONSTRATION PROVES IT

You can actually save the price of a WILSHIRE Power Sweeper in less than 6 months . . . and have cleaner, faster, dustless sweeping . . . inside and outside. There's a WILSHIRE Model for every need . . . 8 to 40 times faster than a man with a broom.

WRITE FOR ILLUSTRATED FOLDER AND PERFORMANCE DATA

WILSHIRE POWER SWEEPER CO.
526 West Chevy Chase Drive, Glendale 4, California

If you write maker identify as IEN-1755

this time-study saves you money!

BUSINESSES SAVE HOURS EACH DAY

you save 16 seconds every time you press a button

Actual time studies taken in hundreds of businesses show that an average of 18 seconds is required to make an "inside" speech contact through the switchboard. With *your own* AMPLICALL "clear line" *internal* communication system—you get *2-second speech contact* within and between departments. AMPLICALL frees busy switchboards for important outside calls—keeps personnel *on the job*, keeps talk terse—saves hours each day for the average business. AMPLICALL saves you money—pays for itself. There is a system to fit your special needs. Get the full facts today!

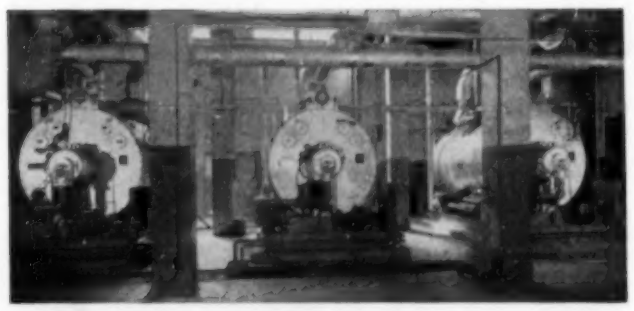
SEE YOUR PHONE BOOK
For your nearest AMPLICALL specialist, look under "Intercommunication" in your classified phone directory—or write direct for full information.

ELECTRONIC **AMPLICALL** INTERCOMMUNICATION

RAULAND-BORG CORPORATION
3523-K Addison Street, Chicago 19, Illinois

If you write maker identify as IEN-1756

Steam Costs Go DOWN where *Powermasters* Go In



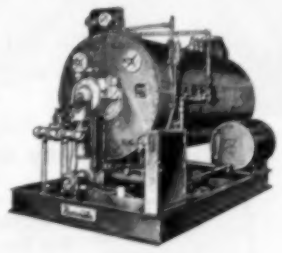
For Example:

A new 535-unit apartment house in Atlanta, Georgia, gets winter heat, summer air-conditioning, and year-round hot water services at average fuel cost of only $1.15 per month per apartment with three *Powermaster* Packaged Automatic Boilers! Low-cost space-saving installation, smokeless combustion, completely automatic operating and safety controls, cost-saving maintenance, trouble-free performance, and a hospital-clean boiler room are other advantages gained.

Have You Checked Your Steam Costs Lately?

Many kinds of industrial plants, food processors, schools, institutions, public buildings, laundries, housing projects, and utilities are also enjoying the cost-saving advantages of *Powermaster* boilers.

Send for New Bulletin
describing and illustrating all cost-saving advantages of *Powermaster* units.



O&S *Powermaster*®

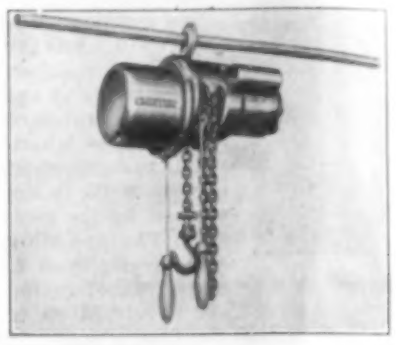
PACKAGED AUTOMATIC BOILERS
Sizes to 500 HP; pressures to 250 psi.

Orr & Sembower, Inc.
Morgantown Road, Reading, Pa.

If you write maker identify as IEN-1758

HOIST . . Chain type electric, ¼ to 1 ton, standard lift to 10 feet

Source: NATIONAL SCREW & MFG. CO.
2440 E. 75th St., Dept. IEN, Cleveland 4, Ohio



Bulletin EC-953

Model EC designates this new chain hoist design, companion unit to the company's Model-E drum type hoist. Two sizes rate ¼ and ½ ton and are equipped with a single chain. A third size, rating 1 ton, employs a double chain. Control centers at pendant cords, two on each assembly to lift and to lower the load.

The motor rates ½ hp. and can be specified single phase for operation on 110 or 220-volt or polyphase for 220 to 550-volt 60-cycle ac. Hoisting speed is 34 fpm. on the smallest unit, 9 fpm. on the largest. The standard 10-ft. lift can be increased to a maximum of 66 ft. on the first two hoists and to 33 ft. on the 1-ton unit. The greater lift requires additional chain and control ropes.

The mechanism employs a Weston mechanical brake and a shoe type solenoid brake. A positive action limit lever, mechanically interconnected with the control shaft, acts instantly at either the upper or lower limit to return the controller to neutral and apply the motor brake to prevent damage from over-travel.

Standard design calls for a single hook suspension, but any one of the three units can be suspended from a trolley the company is prepared to supply. This trolley has rolled steel side plates, ball bearing wheels and is adjustable to operate on 5 to 12-in. beam.

If you write maker identify as IEN-1759

VALVE . . Pressure regulator to handle heavy oils and dirty liquids

Source: A. W. CASH VALVE MFG. CORP.
6612 E. Wabash, Decatur 60, Ill.

Bulletin BBC

Small ports or close fits have been eliminated from the design of this new Type-BBC pressure regulating valve. Working parts are accessible without removing the valve from the line. It is suited for duty in lines handling heavy fuel oil as well as dirty liquids or high viscosity fluids.

The body is cadmium plated iron or bronze. The operating diaphragm is Monel Metal or neoprene, depending on the intended service. The renewable piston and seat are made of stainless steel. A screw, at the top of the assembly, bears upon the adjusting spring in the hood to set a desired outlet pressure.

Maximum initial pressure is 250 lb. and maximum reduced pressure is 200 lb. with a bronze body. These pressures are reduced respectively to 200 and 125 lb. when a cadmium plated iron body is employed. Six sizes are ⅜ to 1½ inches.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN-1760

Headquarters for

ALMCO *Supersheen* SPEED FINISHING

BARREL FINISHING COMPOUNDS

40 different scientifically combined compounds. With the huge selection you can choose the specific compound which will provide optimum results on a given job. Also, special custom made compounds. WHAT IS YOUR FINISHING PROBLEM? Write.

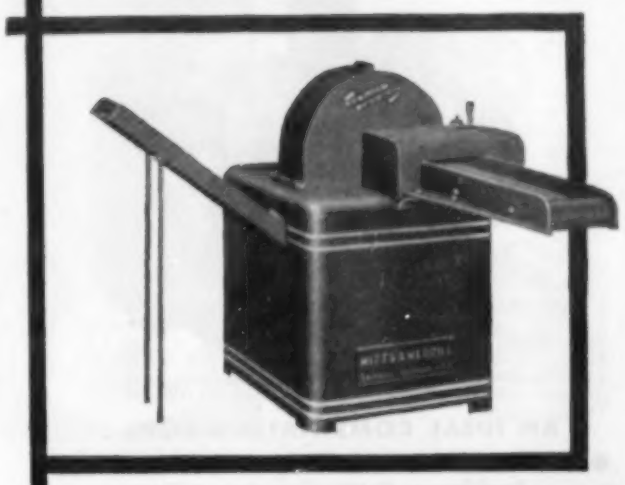
FREE CATALOG
52 pages of money-saving facts, figures. "Before and after photos". The latest on equipment, compounds.

ALMCO *Supersheen*

AMERICA'S LARGEST MANUFACTURER OF ADVANCED BARREL FINISHING EQUIPMENT—MATERIALS AND COMPOUNDS
ALBERT LEA, MINNESOTA

If you write maker identify as IEN-1761

M&M AIR-FLUFF PAPER SHREDDER



The Air-Fluff Paper Shredder is an outstanding machine for use in the commercial manufacture of paper excelsior. Blueprints, letters and confidential records are speedily, safely and efficiently destroyed. Built in 3 sizes ranging in capacity from 200 to 2500 pounds per hour. Each machine can be adjusted to cut widths of ⅛", 3/16", ¼", or ⅜". Write for descriptive literature.

MITTS & MERRILL
1014 South Water • SAGINAW, MICH.

77

If you write maker identify as IEN-1762

LOGAN AIR AND HYDRAULIC POWER

SPEEDS • COORDINATES • REFINES PRODUCTION IN OVER 10,000 INDUSTRIAL PLANTS

Logan HYDRAULIC CYLINDERS

NONROTATING 750 SERIES TYPE
7 standard mountings; 8 standard sizes from 2" to 8" diameter bore.

ROTATING "HR" TYPE
7 standard sizes from 3" to 14" bore.

ROTOCAST® SERIES
7 standard mountings, sizes 2" to 8" bore, strokes up to 8' as standard.

LOGAN MANUFACTURES 6,975 STANDARD CATALOGED ITEMS • CATALOG ON REQUEST
Consult Logan for your Special Heavy Duty, Mill-Type Cylinder requirements.

LOGANSPORT MACHINE CO., INC.
813 Center Avenue Logansport, Indiana

If you write maker identify as IEN-1763

These **Bond** Casters are Your Best Buys for TROUBLE-FREE SERVICE

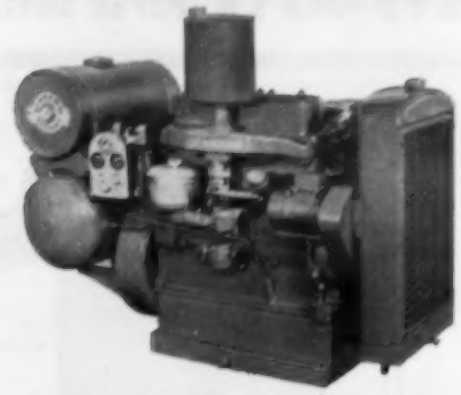
36-A Series—Double Ball Race Swivel Caster
1-A Series—Stationary Caster
41-A Series—Structural Steel Stationary Caster
40-AH-VG Series—V-Grooved Wheel Structural Steel Heavy Duty Swivel Caster
3-A Series—Single Ball Race Swivel Caster
Dual Wheel Swivel Caster

Ask your industrial distributor . . .
he knows that for dependability, economy and trouble-free materials handling you just can't beat Bond Casters. Your distributor has the right Bond Casters for your jobs. Get your copy of Bond Catalog K-38 from him, or write direct.

BOND FOUNDRY & MACHINE CO.
Manheim, Pennsylvania

If you write maker identify as IEN-1764

AIR FOR SHOP OR MAINTENANCE . . .



Model 60-C.F.M. Complete engine driven stationary air compressor mounted on base (no foundation required).

AN IDEAL COMBINATION FOR . . .

- **GENERAL SHOP UTILITY WORK**
  Paint Sprays, Riveting Guns, Impact Wrenches, Grinders, Sanders, etc.
- **FOR OUTDOOR MAINTENANCE**
  Rock Drilling, Paving Breaking, Demolition, Trench Digging, Backfill Tampers, etc.

WRITE FOR BULLETIN AED

SCHRAMM, INC.
WEST CHESTER, PA.

If you write maker identify as IEN-1765

Electrically-Controlled Air-Powered DIAL FEED

Adjustable for 4, 6, 8, 12 or 24 stations

THE Bellows air-powered Rotary Feed Table is a complete "packaged" unit with all valves and valve operating controls built in. The built-in Electroaire Valve simplifies synchronized operation with drill presses, punch presses, arbor presses, etc. 10" diameter table top is geared to provide 4, 6, 8, 12 or 24 stations. Table top may be drilled, tapped, or otherwise machined for mounting jigs, fixtures or even larger size table tops.

• *Write today for Bulletin T-80. Address Dept. IEN-254.*

1150

The Bellows Co.
Akron 9, Ohio

If you write maker identify as IEN-1766

HOW TO USE DRY TYPE TRANSFORMERS PROFITABLY IN YOUR PLANT

Planning the electrical system of your plant with Acme Electric dry type transformers can save you money, material and time. How to eliminate double wiring, provide 3-wire secondary circuits, insulate circuits or balance voltage are only a few of the many ways you can use Acme Electric dry type transformers. Write for the folder DT 195 containing ideas and wiring diagrams. Acme Electric transformers are available in single phase sizes from 1/10 thru 500 KVA; three phase from 3 thru 750 KVA.

ACME ELECTRIC CORPORATION
MAIN PLANT: 262 WATER STREET • CUBA, N. Y.

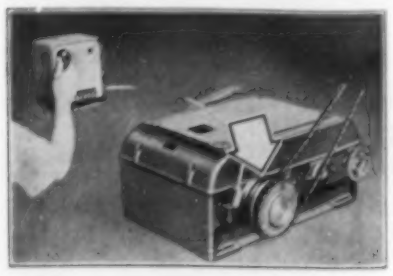
West Coast Engineering Laboratories:
1375 W. Jefferson Blvd., Los Angeles, Cal.
In Canada: Acme Electric Corp. Ltd. • 50 North Line Rd. • Toronto, Ont.

Acme Electric
TRANSFORMERS

If you write maker identify as IEN-1767

DRIVE . . Variable speed unit with torque control magnetic clutch

Source: REEVES PULLEY CO.
800 N. Wilson St., Dept. IEN, Columbus, Ind.



Cushions the drive

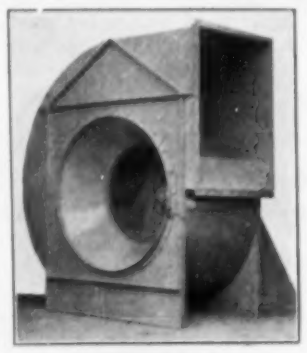
New combination of electro magnetic clutch, torque adjusting control and the company's standard No. 0, 1, 2 or 3 horizontal variable speed transmission is announced by the company. The assembly can be employed to control acceleration and deceleration, to select operating speeds, when a driven machine is standing, and for jogging and inching action. Rate of torque build up is adjusted at the clutch control panel.

The clutch can be mounted on either the input or output side of the transmission. The latter is used when it is desired to pre-select output speeds before starting the driven equipment. Maximum torque can be set to prevent overloading.

If you write maker identify as IEN-1768

VENTILATING . . Centrifugal fan, non-overloading, 12 to 132 inches

Source: ROBINSON VENTILATING CO.
1945 Harmony St., Zelienople, Pa.



Bulletin "Type J"

Capacity ranges from 650 to 780,000 cfm. for the company's new Type-J line of backward curved non-overloading centrifugal fans. The line includes single-width, single-inlet and double-width, double-inlet construction for static pressure to 6 in. with propeller diameters ranging from 12 to 132 inches. The double-inlet design employs two single-inlet impellers back to back. Construction is in open hearth steel plate in welded assembly. Inlet orifices are shaped to lead the air into the impeller in efficient manner.

If you write maker identify as IEN-1769

Instrument mount capable of absorbing vibration is employed as the base for a camera microscope that must remain completely still during exposures ranging from seconds to minutes. The base has been designed by Robinson Aviation, Inc., Teterboro Airport, Dept. IEN, Teterboro, N. J. It employs the company's steel cushioning material known as Met-L-Flex.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . *See Page 50*

If you write maker identify as IEN-1770

The All New MOBILIFT 4000 Pounder

Has *Everything* You Want in a "Sit-Down" FORK LIFT TRUCK

MODEL D-424
4,000 lbs. capacity
at 24" Load Center
83" hydraulic mast
lift height 108"

Check these trend-setting features . . .

- CHRYSLER 65-bhp 6 cyl. GAS ENGINE.
- CHRYSLER GYROL FLUID COUPLING.
- MOBILIFT CONSTANT-MESH TRANSMISSION with a Push-Pull Lev-R-Matic Control for forward and reverse —No Clutch Pedal—No Gears to Shift—2 speeds forward, 2 reverse
- MOBILIFT FULL-FLOATING DRIVE AXLE.
- BALL-BEARING WORM & NUT TYPE STEERING.
- HYDRAULIC BRAKES.
- EASY TO GET ON AND OFF—NO OBSTRUCTIONS.
- FREE ACCESS FROM LEFT OR RIGHT SIDE.
- ONE-PIECE HOOD RAISES FOR EASY SERVICE ACCESSIBILITY.

Write for complete details

LAMSON MOBILIFT CORP.
835 S. E. MAIN STREET, PORTLAND 14, OREGON
2317 W. 38TH, CHICAGO • 730 PATTERSON, E. RUTHERFORD, N. J.
2724 TAYLOR STREET, DALLAS • 2730 SAN PABLO AVE., BERKELEY
1113 SPRING STREET, N.W., ATLANTA

If you write maker identify as IEN-1771

New! Low-Cost! Wide-Range! VARIABLE Speed Sheaves

Easily Attached to Any Machine

1/15 TO 15 HP.
RATIOS UP TO 8:1

● Simple, sturdy Speed Selector Sheaves are applied to any machine in only a few minutes . . . giving you wide-range speed control at extremely low cost. You get wide speed variations with standard V-belts, since two variable pitch sheaves are used. Eliminates bulky sliding motor bases, movable jackshafts and wide, high-cost special V-belts.

- Standard V-belts
- Automatic belt alignment
- Fixed shaft centers
- LOW COST

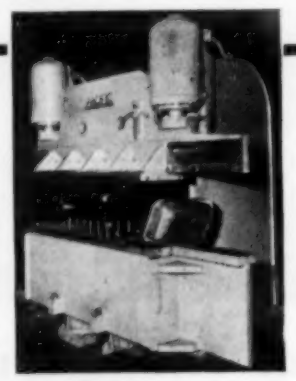
Write FOR FREE BULLETIN

SPEED SELECTOR INC.
118-A Noble Court • Cleveland 13, Ohio

If you write maker identify as IEN-1772

TWO PRESSES for the PRICE OF ONE . . .

A DEEP DRAW PRESS — A PRESS BRAKE



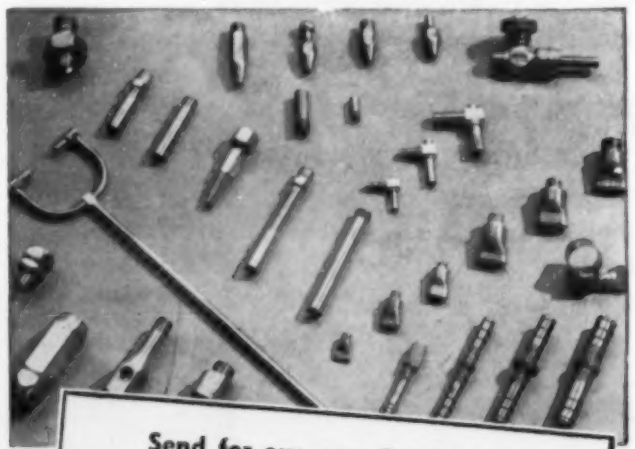
This 100 ton PACIFIC HYDRAULIC PRESS BRAKE is unique as a draw press because it provides a maximum of accessible working space without corner strain rods. It also can be easily converted to a press brake in less than ten minutes by removing the upper platens. As a press brake, it incorporates all of the advantages of "The Pacific" — the first really safe brake. It can't be jammed — the stroke is infinitely adjustable from 1/8" to 10" with full tonnage available throughout the stroke — It accurately straightens and air bends — It is designed for heavy punching and blanking at any point along the bed.

PACIFIC HYDRAULIC PRESS BRAKES have proved themselves by years of daily operation throughout the World.

Sales and service available in all major cities of the United States. Call us for assistance in supplying a machine to fit your special needs.

PACIFIC INDUSTRIAL MFG. CO.
848 - 49th Avenue - Oakland, Calif.

If you write maker identify as IEN-1773

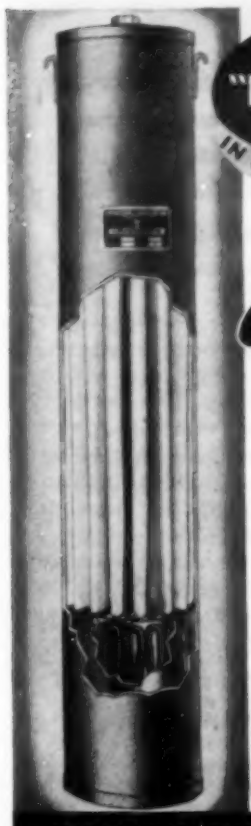


Send for our new Catalog 13K containing the latest in

High Vacuum Pumps,
Glass Working Machinery,
Burners for Glass Blowing,
Auxiliary Burner Equipment,
Glass Blowers' Supplies,
Pure Gum Rubber Tubing,
Valves, Gauges, etc.
Blowers and Gas Pumps,
Vacuum Pump Oil,
Ovens, Furnaces.

RESEARCH VACUUM SUPPLY COMPANY
Glass Blowing Equipment — High Vacuum Pumps and Accessories
MANUFACTURERS RV DISTRIBUTORS
3434 MONTROSE AVENUE, CHICAGO 18, ILLINOIS

If you write maker identify as IEN-1774



for "INSTRUMENT-QUALITY" AIR

IN COMPRESSED AIR OPERATIONS

HANKISON
MODEL A-100-D
Condensifilter

Featuring the New—Economical
DISPOSABLE FILTER CARTRIDGE

- *CONDENSER*
- *MECHANICAL FILTER*
- *AUTOMATIC TRAP*

Combined in a single unit!

RATE OF CAPACITY:
100 scfm at 100 psig

MULTIPLE UNITS:
Installed in parallel increase capacity

Consult us on your specific problems

WRITE . . .
for illustrated bulletin DB-130

HANKISON CORPORATION

350 Biltmore Building • 951 Banksville Road • Pittsburgh 16, Pa.

If you write maker identify as IEN-1775

Keeping steam cheap . . .
BOILERS FOR

Off to a long productive "career" in foreign service, these three B&W Type FM Boilers are hoisted aboard ship at New York for the long voyage to Bombay, India. They will be followed shortly by another one.

more and more B&W Type FM Units are going into foreign service

Loading for their trip to the other side of the earth, these three B&W Integral-Furnace Boilers, Type FM, typify the growing demand for these compact, shop-assembled units by industries in many parts of the world. Ordered by the Standard-Vacuum Oil Company for their new Stanvac Bombay Refinery in India, these self-contained, B&W steam-generating units each will provide 20,000 lb of superheated steam per hr.

A water-tube unit with a fully water-cooled furnace, the B&W Type FM Boiler is designed for indoor or outdoor operation . . . is suitable for single or multiple-unit installation . . . is simple in operation, with push-button start and stop, and automatic control for meeting quick load variations. Delivered assembled, the FM Boiler is ready to be lifted or skidded into position, connected to fuel, water, and electric services, and put to work.

Combining the benefits of "packaged" steam with the advantages of big boiler design, the versatile B&W Type FM Boiler is being selected for more and more foreign installations . . . is already serving a wide variety of domestic industries, utilities, and other users. FM Units having a total steam capacity of over 7,000,000 lb per hr are now in service or on order. Available in standard sizes for loads ranging between 2900 and 28,000 lb of steam per hr at pressures from 15 to 235 psi, B&W's "midget work-horse" is also obtainable for operation at higher pressures.

OTHER COST-SAVING FEATURES

- Saves Erection Time and Cost • Meets Wide Range of Service
- Fast Steaming • Low Maintenance • Easy Accessibility
- Burns Oil and/or Gas • Saves Fuel • Saves Space

BABCOCK & WILCOX
BOILER DIVISION

G-627

Write for Bulletin G-76 for full details about this unique, small boiler. The Babcock & Wilcox Company, Boiler Division, 161 East 42nd Street, New York 17, N. Y.

If you write maker identify as IEN-1777

SWITCH . . Quiet toggle design for use in 15, 20, 30 amp. ac. circuits

Source: BRYANT ELECTRIC CO.
1421 State St., Dept. IEN, Bridgeport 2, Conn.

General purpose ac.

Very little noise accompanies the action of this new general purpose toggle switch. It has been designed to comply with the requirements of a new Underwriters' Laboratory standard for use in ac. circuits only. Under this standard it can be employed for a tungsten filament lamp load up to the current rating of the switch at 120 volts, for an inductive load up to its rated current and for full load current up to 80 per cent of its rating for a motor.

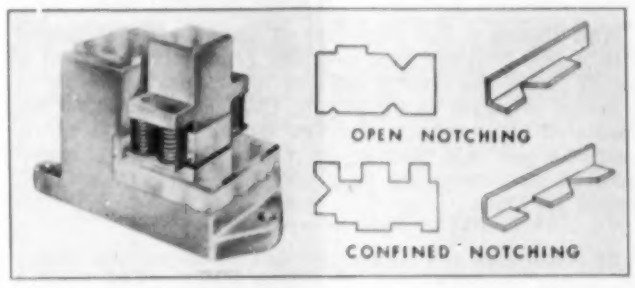
The rating is maintained and not cut down, as in previous code requirements, for operation in circuits higher than 120 volts. Actual rating of the switch is 277 volts, making it suited for control of fluorescent lighting where the lamp operates on 277 volts derived from a 480-volt 3-phase 4-wire circuit.

Construction includes silver contacts, a plastic housing, conventional terminals, dimensions that permit application in a standard wall box with a standard cover plate. The design makes it necessary for the contacts to be fully on or fully off at any stable position of the toggle lever.

If you write maker identify as IEN-1778

PRESS TOOLS . . Punch and die units for 90 deg. vee, corner, angle notching

Source: GENERAL RIVETERS INC.
777 Hertel Ave., Dept. IEN, Buffalo 7, N. Y.



Catalog, "Notching and Hole Piercing Units"

Self-contained design characterizes this new assembly of punch, die stripper and springs for notching operations. The assembly applies singly or in multiple on a press bed. The press ram is employed only to drive the punch down to cut through the work. The springs strip the work and return the punch to "up" position when the press head retracts.

Each unit has a shut height of 6 5/16 in. and a die height of 2 19/32 inches. Both dimensions are identical with the company's line of hole piercing units, previously described IEN-8495-53. Punch sizes, in open and confined types, are 2 by 2 in., 3 by 3 in., and 5 by 5 inches. Special shapes can be made to specifications.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN-1779

Ask us about— DIPPED RUBBER PRODUCTS AND COATINGS

Take, for example, this neoprene bellows for protecting the shaft on a gear grinding machine from abrasive materials and metal cuttings. Fully as durable as a pressure molded product, *it is* surprisingly more economical!

This material-handling basket is dip-coated with plastisol, making it resistant to a wide range of chemicals, plating solution and solvents, enabling a complete cycle of operations to be handled in one basket. Plastisol coated baskets and plating racks effect large savings. They outlast lead or rubber against abrasion and withstand higher temperatures than rubber.

We welcome the opportunity of telling you more about the advantages of dipped neoprene products and plastisol coatings.

Spray-Dip RUBBER CORP.
2671 MAIN STREET BUFFALO 14, N. Y.

If you write maker identify as IEN-1780

HOLD LABELS *SECURELY!* . . TO TIN, METAL, GLASS

Grip-Tight is ideal for food, chemical, paint cans

GRIP-TIGHT Label Paste, the time tested resin emulsion paste, for hand brushing, definitely holds paper labels smoothly, easily, permanently to hundreds of surfaces and materials including: tin cans, metal pails, steel drums, lacquered, painted, varnished surfaces, glass bottles, metal parts, etc.

Use it for attaching product labels, instruction and caution labels, Express Waybills, circuit diagrams . . this *ONE* adhesive may do all your labeling work.

Fill in coupon for further details or send for trial shipment today.

MAIL THIS COUPON TODAY!

Gentlemen: Please ship F.O.B. Chicago or New York, the following trial order ON APPROVAL. Invoice to be cancelled if merchandise not satisfactory.

.....Quart Jars Grip-Tight at $1.50 ea.
.....Gallon Jars Grip-Tight at $4.00 ea.
☐ Send Technical Bulletin describing Grip-Tight and complete price schedule.

Name _____
Address _____
City _____ State _____

PAISLEY PRODUCTS INCORPORATED
Manufacturers of Glues, Pastes, Resin Adhesives, Cements and Related Chemical Products
1770 CANALPORT AVE., CHICAGO 16, ILL. ★ 630 W. 51st STREET, NEW YORK 19, N. Y.

If you write maker identify as IEN-1781

Not when you use KIMPAK*301!

New KIMPAK 301 is the practical solution to appliance surface scratching and other marring damage. KIMPAK 301's ability to shield the fine finish from abrasive high spots on the inner walls of cartons and blocking and bracing members of crates makes it the ideal protective agent in an appliance package. And KIMPAK 301 costs no more than ordinary materials. It is specially designed to prevent the three major causes of scratching:

1. Abrasiveness of the inner spacers. KIMPAK 301 provides a scratch-free, non-disintegrating, compressible barrier between inner spacers and the appliance finish. Its conformability ensures a snug package.

2. Dust, dirt, cinders that sift into the container. The combination of high creping and porous structure—exclusive with KIMPAK—traps dirt, grit or cinders, which may lodge between the packaging material and the surface.

3. Abrasive action of harsh packaging materials. KIMPAK 301 is soft and non-abrasive . . . free from wood splinters, dirt and other abrasive materials. No lumps, hard glue spots or stiff wrinkles.

Scratching is but *one* of many problems encountered in appliance packaging. These problems are solved with KIMPAK 301. For more details, contact the KIMPAK distributor in your area, or mail coupon below.

SPECIFY KIMPAK 301 TO SOLVE THESE INTERIOR PACKAGING PROBLEMS:

- Scratching
- Pressure-marking
- Staining
- Corrosion
- Conformability
- Ease of handling
- Appearance
- Disintegration

Whatever your protective interior packaging requirements, there is a Kimpak specification that does the job . . . better!

KIMPAK INTERIOR PACKAGING
*T. M. REG. U. S. & FOREIGN COUNTRIES

A Product of **Kimberly-Clark**

KIMBERLY-CLARK CORPORATION Dept. IEN-24
Neenah, Wisconsin

We would like to learn how new KIMPAK 301 can provide better protection at lower cost for our products. Please send complete information.

Name _____
Firm Name _____
Street Address _____
City _____ *Zone* _____ *State* _____

If you write maker identify as IEN - 1783

NEW PRESS BRAKE

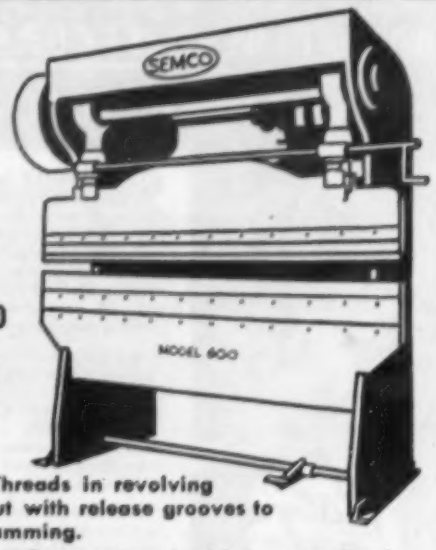
IN TWO SIZES
6 FT. and 8 FT.

•

LOW PRICED

•

BIG PRESS FEATURES



- Buttress Threads in revolving bronze nut with release grooves to prevent jamming.
- One Piece Construction (welded, normalized, machined in one piece).
- Ball and Roller Bearings throughout.
- Fine adjustment.

Made by the makers of famous SEMCO "34 YEAR" BRAKE DIES.

Write for NEW color folder and prices of PRESS BRAKES and 26 standard BRAKE DIE designs. Send die specifications for estimate.

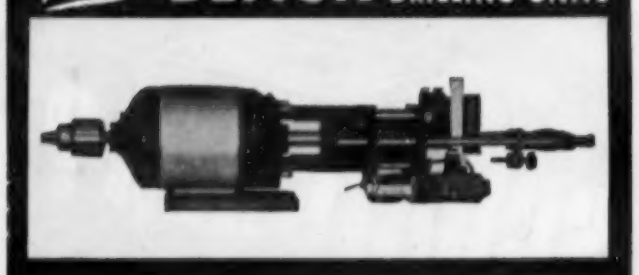
SEMCO

SERVICE MACHINE CO., INC.

200 Miller Street • Elizabeth 4, N. J.

If you write maker identify as IEN - 1784

New BLACK SELF-CONTAINED DRILLING UNITS



NO SPLINES

Self-contained units, at low cost, for drilling, tapping, chamfering, reaming and similar operations.

NO GEARS

New principle employs traversing motor shaft for work spindle, applies even torque with practically no end play. Drill has air feed for rapid advance to work—hydraulic control to completion of work cycle with uniform feed. Tapping unit controlled so tap follows its own lead without chamfering first thread or stripping threads on return stroke. Easy adjustment—depth accuracy to within .001".

NO CAMS

NO CLUTCHES

Operate in any position. Wide range of speeds and sizes.

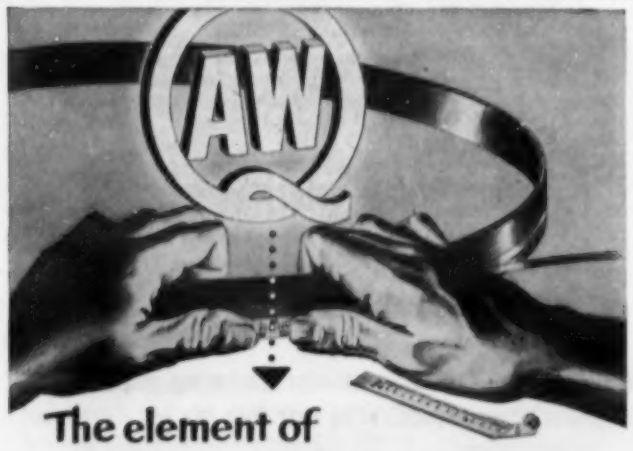
NO REVOLVING WEIGHTS

Write for complete information

BLACK DRILL COMPANY, INC.

1378 EAST 222nd STREET • CLEVELAND 17, OHIO

If you write maker identify as IEN - 1785



The element of

PRIDE IN CRAFTSMANSHIP

Pride plays a big part in how well a man does his job. At American Welding, AWQ symbolizes American Welding Quality.

It is this pride in one's job that enables American Welding to produce welded components with the same care that you would use in your own plant. So, if your problem can be solved by welding — either fusion or resistance — of any type of material — or a component or part that can be joined by welding — call your local Amweld representative or write us.

THE AMERICAN WELDING & MANUFACTURING CO.

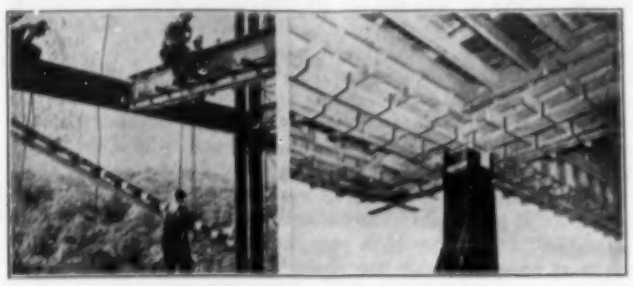
160 DIETZ ROAD • WARREN, OHIO

IDEAS FOR YOU

Items of particular interest in the news other than straight new products, development pointing toward the future, unusual procedure to accomplish a point, suggestions for practical action, each to provide ideas for you.

If you write maker identify as IEN - 1786

A building construction company has found a new use for steel strapping as shown in the illustration. Floor joist forms



are secured to I-beams with a saving over previous methods of nearly 80 per cent of the man hours required to set the form. One man can apply 14 straps in about 5 minutes. Two men replace 6 formerly required to set up the forms for a complete floor. The constructors also employ the strapping to set column forms, window brackets, flagstone supports. Acme Steel Co., 2840 Archer Ave., Dept. IEN, Chicago 8, Ill., makes the strapping and tools.

If you write maker identify as IEN - 1787

Wall thickness and roundness of tubing can be checked with a new beta ray gage in which radioactive material is moved inside the tube in relation to a sensitive means of detecting radiation on the outside. Changes in radiation are translated into thickness readings and are shown by movement of a pen on a recorder chart. The equipment is manufactured by Tracerlab, Inc., 130 High St., Dept. IEN, Boston 10, Mass.

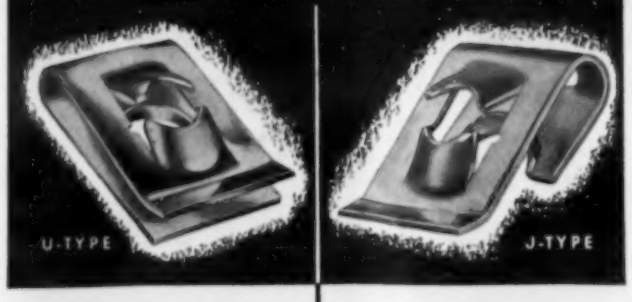
If you write maker identify as IEN - 1788

Stencil ink is available now in colors, blue, green, orange, red, white, yellow, in addition to the original black, in pressurized containers for spray application upon pressing a button. Reynolds Industries Inc., 4500 Euclid Ave., Dept. IEN, Cleveland 3, Ohio, is the source. The ink is quick drying, waterproof and will cover 100 to 130 three-line stencils with a 12-oz. can. One can lists at about $2. Packaging is 12 to a carton.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 1789

Speed Nuts® ...proved cost-savers on assembly lines throughout industry



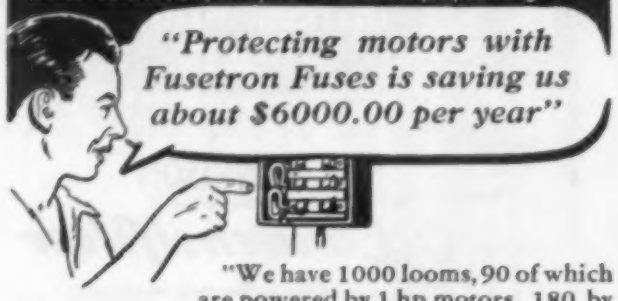
"U" and "J" Type SPEED NUTS are self-retaining; hold a constant hole alignment, and will not vibrate loose. They are made of highest quality spring steel in a wide variety of standard and special sizes. "U" and "J" Types are only two of thousands developed by Tinnerman Engineers to cut fastening costs. Ask your Tinnerman Representative, or write us direct for a FREE "Fastening Analysis."

TINNERMAN PRODUCTS, INC.

Dept. 12, Box 6688, Cleveland 1, Ohio

If you write maker identify as IEN - 1790

COMMANDER MILLS, Inc., Sand Springs, Okla.
Chief Electrician, Wm. Bert Peacock, Speaking . . .



"We have 1000 looms, 90 of which are powered by 1 hp motors, 180 by 1½ hp, 100 by ½ hp, 630 by ¾ hp. Prior to 1949 several hundred of these were rewound each year.

"We started using Fusetron Fuses in the winter of 1949 and began to keep individual records on motors. The reduction on motor burn-outs was immediately noticeable.

"In the entire plant we have over 2,500 motors, representing a little more than 5,000 hp connected load. The following list shows our actual expenses on motor repairs:"

YEAR OF REPAIRS	NUMBER OF MOTORS	AMOUNT
1949	(No Record Kept)	$6,804.00
1950	87	2,796.20
1951	59	2,640.44
1952	63	2,165.63
1953 (1st 6 mos)	23	445.84

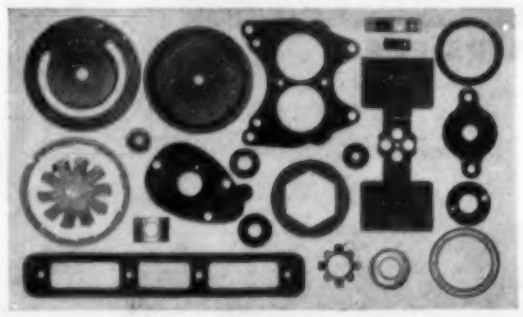
You too can profit, as did Commander Mills, by protecting motors with Fusetron dual-element fuses.

Bussmann Mfg. Co. Dawson McGraw Electric Co. University at Jefferson • St. Louis 7, Mo.

If you write maker identify as IEN - 1791

GOT A PRODUCTION OR DESIGN PROBLEM?

• GASKETS • PACKINGS • WASHERS
• SEALS • SHIMS • BUSHINGS • "O" RINGS



80 YEARS OF AUBURN "KNOW HOW" HAS THE ANSWERS!

Yes . . . over 80 years experience in engineering, designing, fabricating and production qualifies Auburn to help you find the ideal answer to your problem. Where gaskets, washers, and other sealing devices are concerned, Auburn engineers are tops in the field.

Their know-how is yours—for the asking. We are tooled to fabricate in virtually any material:

Leather, Asbestos, Teflon, Silicone Rubber, Neoprene, Rubber, Cork, Fibre Compositions, Phenolics, Felt, Cloth, Paper, Cardboard, Plastics, Brass, Steel, Copper, Aluminum, Other Special Materials.

Send us your specifications or blueprints. You'll receive quotations, recommendations without obligation.

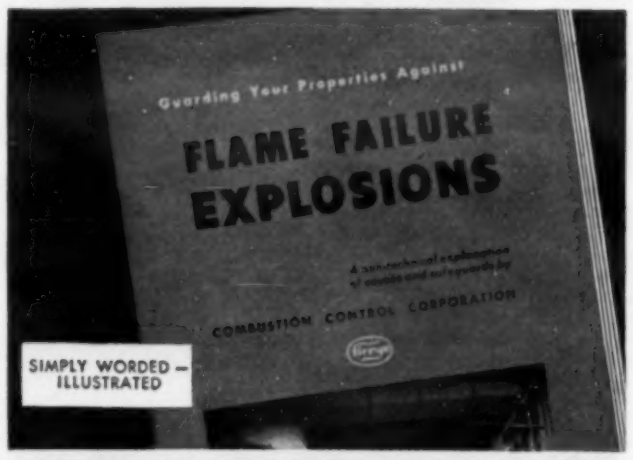
AUBURN MANUFACTURING COMPANY

302 Stack St., Middletown, Conn.

Representatives: Atlanta, Ga.; Detroit, Mich.; St. Louis, Mo.; Los Angeles, Cal.; Minneapolis, Minn.; Washington, D. C.; Cincinnati, O.

If you write maker identify as IEN - 1892

FREE! New Safety Information 4-out-of-5 Plants Need!



IF YOU BURN oil, gas, powdered coal or other fuel, for power, processing or heating, the chances are 4-out-of-5 that you do not have complete safeguards against burner flame-failure explosions.

Why take chances . . . ? This new booklet gives you all the information you need to prevent flame-failure explosions. With it you can spot burner explosion hazards in your plant — identify obsolete or inadequate "protective" devices — determine your needs for the most modern safeguard equipment. Get your copy, free! Please give your company name and title.

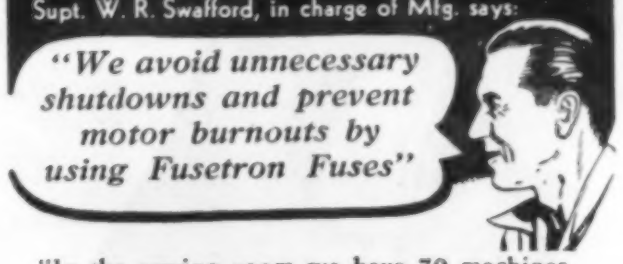
WRITE:

COMBUSTION CONTROL CORPORATION
Dept. EB-2, 718 Beacon Street
Boston 15, Mass.

fireye

If you write maker identify as IEN-1793

COMMANDER MILLS, Inc., Sand Springs, Okla.
Supt. W. R. Swafford, in charge of Mfg. says:



"In the sewing room we have 70 machines using ½ hp, 3-phase motors.

"They are all equipped with Fusetron fuses rated at 3.2 amperes. Formerly, we used 30 ampere fuses to avoid unnecessary blowing on the starting surges of the machines.

"The Electrical Dept. installed these smaller Fusetron fuses several years ago, and we have not had any trouble with blowing them needlessly and neither have we had any motor burnouts.

"We believe it better to blow a fuse than burn out a motor!"

DON'T RISK LOSSES!

One lost motor . . .
One needless shutdown . . .
One destroyed switch or panel . . .
One burned out solenoid . . .

May cost you far more than replacing every ordinary fuse with a Fusetron dual-element Fuse

FUSETRON — TRUSTWORTHY NAMES IN ELECTRICAL PROTECTION

BUSS — Bussmann Mfg. Co. Div. McGraw Elec. Co. St. Louis 7, Mo.

If you write maker identify as IEN-1794

SOLID . . . as a rod
FLEXIBLE . . . as a wire rope

TRU-LAY Push-Pulls snake around obstructions. Provide positive remote action for operating clutches, gates, slides, etc. Operate while flexing. Weatherproof, dustproof types. Capacities up to 1000 pounds input.

Write our Detroit office today for DH-287

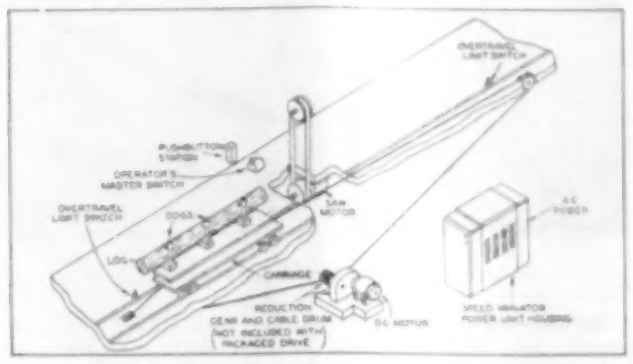
TRU-LAY PUSH-PULL CONTROLS

ACCO
AUTOMOTIVE AND AIRCRAFT DIVISION
AMERICAN CHAIN & CABLE
601 Stephenson Bldg., Detroit 2
2216 So. Garfield Ave., Los Angeles 22 • Bridgeport 2, Conn.

IDEAS FOR YOU—Continued

If you write maker identify as IEN-1796

Four sizes rate 7½ to 30 hp. in a new "packaged" variable speed drive for log-sawing carriages. General Electric Co.,



Dept. 6X-201, Schenectady 5, N. Y., supplies it for field application on small and semi-portable sawmills. The package consists of a motor-generator set, amplidyne control panel, ac. motor control, dc. line contactor and dynamic braking resistors, all enclosed in a self-supporting cabinet. Control centers at a pushbutton station and a master switch at which speed is selected and changed.

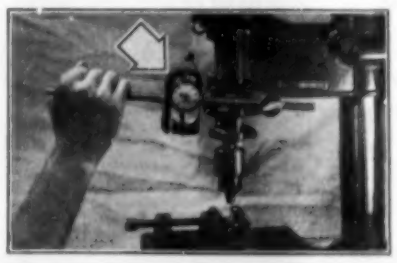
If you write maker identify as IEN-1797

Crude oil is protected against evaporation in storage tanks by a floating blanket made of Bakelite phenolic resin in the form of tiny hollow particles measuring 0.0002 to 0.0036 in. in diameter. These particles are known as Microballoons. They have the appearance of small brown balls under the microscope. Bulk density is about 8.7 lb. per cubic foot. The plastic is resistant to attack by oil and other chemicals so the tiny balls float instead of sinking to the bottom of the storage tank. They have structural strength to keep them from bursting in contact with each other and with the metal walls of the tank. They will not soften or liquefy at high temperaures and will not affect the oil harmfully.

The balls are applied as a blanket, ½ in. or more in thickness, by pumping them into the oil in the tank mixed with crude oil. They come to the surface where they float up and down as the oil level changes in the tank. Cost figures indicate a saving in crude oil equal in value to the initial installation cost in one year or less. Details are available from Bakelite Co., 260 Madison Ave., Dept. IEN, New York 16, N. Y., on the particles and their application.

If you write maker identify as IEN-1798

New application of the Dillon gage has been made in a drilling machine feed arm to read pressure in pounds on the drilling machine spindle. The machine operator can watch the gage and limit pressure on the arm to minimize danger of breaking small drills. Arm and gage are removable as a unit for transfer from one machine to another where critical drilling work is being done. W. C. Dillon & Company, 14620 Keswick St., Dept. IEN, Van Nuys, Calif., can supply the gage in nine capacities, the smallest reading 0 to 10 pounds.



All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN-1799

If you write maker identify as IEN-1800

Smoother operation, cleaner packages for large soap firms

● When fabric conveyor belts were used to convey detergents through filling operation, the resulting spillage tended to build up, causing belt to stretch and slip and bottom of package to smear. Now that a Cyclone Spiral Woven Belt is being used, the wide-open mesh of the belt allows all fallen particles to fall through the belt. The packages stay clean and free from objectionable smearing.

In the Cyclone Conveyor Belt Catalog is complete information on all types of belts. Write to Cyclone Fence, Dept. C-24, Waukegan, Illinois for a free copy.

U·S·S CYCLONE
METAL CONVEYOR BELTS

CYCLONE FENCE DEPARTMENT
AMERICAN STEEL & WIRE DIVISION
UNITED STATES STEEL CORPORATION, WAUKEGAN, ILLINOIS

USS
UNITED STATES STEEL

If you write maker identify as IEN-1801

5 REASONS FOR CALLING CORDS LTD.
For Cords and Cord Sets

★ Fast delivery on cords of standard construction.
★ Complete engineering and manufacturing service on cords for special applications.
★ Integrated engineering-production control from rod mill to mold department.
★ Most comprehensive stock of dies and molds for electronic cords and assemblies in existence.
★ Quality proved by use on millions of products.

Write for details, explaining your application

WIRE SX PRODUCTS
CORDS LTD.
DIVISION OF ESSEX WIRE CORPORATION
121 DODGE STREET, DE KALB, ILLINOIS

If you write maker identify as IEN-1802

Protects AIR TOOLS AND EQUIPMENT

against rust, scale and condensation in the air line . . . provides constant lubrication

The Keller Lubricator-Filter operates automatically when air tools or equipment are in operation. Filter removes moisture as well as solids—easily cleaned by opening drain cock at bottom. Oil feeds from the lubricator through an upright wick—no flooding or waste when tools are not in use.

Transparent bowls show when filter needs draining, or when light spindle oil should be added to lubricator. Write for descriptive Bulletin #65-5.

Send for illustrated descriptive bulletin and detailed information

Keller Tool Company
GRAND HAVEN, MICHIGAN

If you write maker identify as IEN - 1803

HOW YOU CAN SAVE

with ISOMODE* PAD vibration control

A standard, economical package of ten ISO-MODE* PADS provides vibration control for as much as 80 tons of machinery—enough to demonstrate that you can save four ways:

1. Save bolting or lagging—machines stay put on any type floor.
2. Save workers' energy — noise levels go down.
3. Save through increased efficiency—vibration won't interfere with nearby equipment or offices.
4. Save maintenance — there's less strain on machines, less building damage.

And all at small cost!, Simply cut to size — no waste. Write for price data and application bulletin No. 415.

*Trade Mark

THE MB MANUFACTURING COMPANY, INC.
1064 State Street, New Haven 11, Conn.

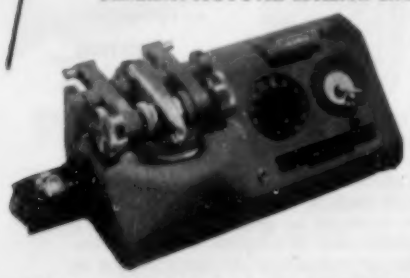
If you write maker identify as IEN - 1804

- with 8 TEST RANGES
- DIRECT DIAL READINGS

Designed to determine both the initial and basic stiffness of sheet and wire specimens, this improved ultra-sensitive model has *eight* test ranges instead of six. Now, the flexural rigidity of very thin materials such as cellophane and metal foil can also be determined with the SR150-14 attachment which magnifies dial readings 100 times. Test length, angle of deflection and rate of loading are all standardized for accurate test results between laboratories. Readings taken direct from dial. No calculations necessary! Send coupon for folder giving details and prices!

ABRASION RESISTANCE TESTER

Simulates ACTUAL abrasion and wear conditions during test and gives ACCURATE numerical index for your report. Recognized the world over as the STANDARD for testing plastics, rubber, textiles, paint and linoleum. Send coupon below for free booklet!



MAIL COUPON FOR FREE LITERATURE

Taber INSTRUMENT CORPORATION SECTION 15
111 Goundry St., North Tonawanda, N. Y.

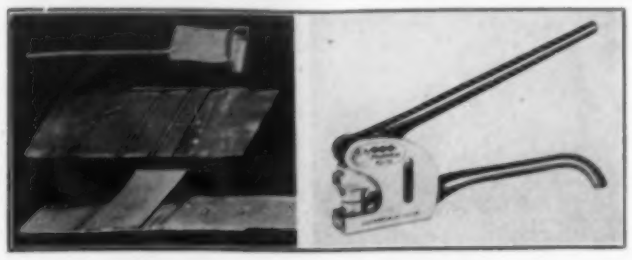
☐ Please send me booklet on Taber Stiffness Tester
☐ Please send me booklet on Taber Abraser

NAME .....
COMPANY .....
ADDRESS .....
CITY ..... ZONE ..... STATE .....

If you write maker identify as IEN - 1806

WELDING . . Plier type tool lap welds aluminum by pressure only

Source: UTICA DROP FORGE & TOOL CORP.
2415 Whiteboro, Dept. IEN, Utica 4, N. Y.



Licensed by Koldweld Corporation

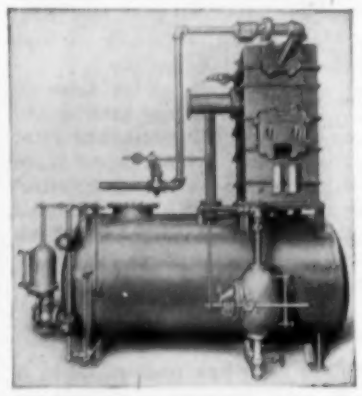
The company announces development of its second plier type tool for application in the Koldweld process in which metals are welded by pressure only. The first of these tool was designed to butt weld wire, previously described IEN-13840-52.

Model KL-10 applies on aluminum foil, sheet, shaped extrusions or strip. It will weld aluminum and electrical copper in thicknesses from 0.001 to 0.040 in. for an overall maximum thickness of 0.080 inch. It will take any type of aluminum except 56S and aircraft quality in T-temper. The tool weighs about 2¾ pounds. It lists at $280 including one pair of dies and also including license for its use. Additional dies list at $25 or more depending upon their design.

If you write maker identify as IEN - 1807

WATER TREATING . . Deaerator, heater and tank to feed small boilers

Source: COCHRANE CORPORATION
3132 N. 17th St., Dept. IEN, Philadelphia 32, Pa.



Ready to operate

Capacity is to 60,000 lb. per hr. of water with an oxygen content less than seven parts per million in this new Uni-Pac packaged deaerator. The unit is factory assembled, ready for installation. It deaerates and heats the water to the temperature corresponding to the saturated steam pressure maintained within the unit. The storage tank ranges from 35 to 250 cubic feet. The unit can be specified in either right-hand or left hand design.

If you write maker identify as IEN - 1808

Contract work involving complex metal working operations, to include development engineering, pilot runs and final production of component parts and assemblies of stainless steel, aluminum, titanium and other high capacity metals and alloys, make up the services of Twigg Industries, Inc., 1011 Third Ave., Dept. IEN, Terre Haute, Ind. Now the company has added equipment for Nicro-Brazing in which the nickel chromium brazing material is melted in a dry hydrogen atmosphere to form a new alloy, with stainless steel as an example, having a Rockwell C hardness of 30 to 35.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 1809

Valuable Information

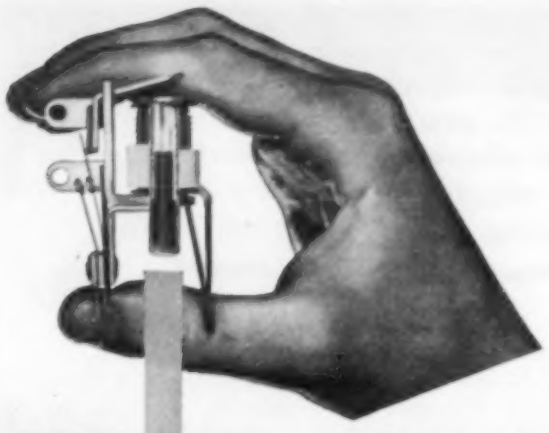
FREE to Factory Executives, Engineers and Maintenance Dept. Officials

68 Useful Pages

New Manual shows how to properly install and service Clarage fans, blowers and air conditioning units . . . valuable information adaptable to almost any type of fan job. Sent without charge to key men who qualify by writing us on their company's letterhead.

YOU CAN RELY ON
CLARAGE
CLARAGE FAN COMPANY, Kalamazoo, Mich.
Sales Engineering Offices in All Principal Cities

If you write maker identify as IEN - 1810



NEW *Silic-O-Netic* TIME DELAY RELAY...*only one moving part*

SEND FOR BULLETIN 5001A.

It is complete and informative.

The simplest time element ever developed is the basis of the new low cost *Silic-O-Netic* Time Delay Relay. There are no heating elements . . . no gaskets . . . no levers . . . no mechanical connection to the armature, yet the time element forms the very heart of the relay itself.

Being hermetically sealed, the *Silic-O-Netic* element is forever free from the effects of dirt and dust. Employing silicones, timing is positive and unaffected by normal temperature changes.

HEINEMANN ELECTRIC CO.
150 Plum Street, Trenton 2, N. J.

If you write maker identify as IEN - 1811

BEARING LIFE EXTENDED 1,013 HRS.

with NEW ALEMITE OIL-MIST

AUTOMATIC LUBRICATION SYSTEM

BEFORE Oil-Mist: Spindle bearings on a grinder at a leading manufacturing company* were able to operate only 100 hours without replacement. Replacement cost of a complete spindle was $90, or $18 for new bearing replacements. *Plus* 3 hours down time. *Plus* labor costs.

AFTER Oil-Mist: The same grinder has been running 1,113 hours—*and the spindle is operating as satisfactorily as if new bearings had just been installed.* After deducting the cost of Oil-Mist plus installation, this one unit has shown a savings of over $600!

what is... OIL-MIST?

It is a new, unbelievably simple lubrication system that atomizes oil into mist and distributes it through tubing to bearings. Oil-Mist bathes all bearing surfaces with fresh, clean, cool oil film. Uniformly maintains oil film on plain and anti-friction bearings, gears and chains regardless of variations in load, temperature or speed! No "peaks and valleys" of lubrication.

Fully automatic, Oil-Mist eliminates waste and the uncertainties of the "human element." Extends bearing life as much as 17½ times. Seals bearings against dirt and abrasives. Cuts oil consumption as much as 90%. Greatly reduces the number of oils needed.

Get the facts NOW!

Just out! This new catalogue brings *you* the complete story on Oil-Mist. Specifications, models, typical applications, actual case histories. Get yours now. Write Alemite Division of Stewart-Warner, Dept. K-14, 1850 Diversey Parkway, Chicago 14, Illinois

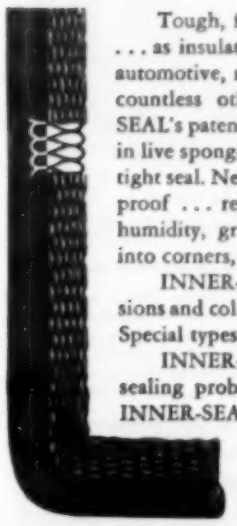
*Name on request

If you write maker identify as **IEN - 1813**

Bridgeport INNER-SEAL

INDUSTRY'S MULTI-PURPOSE SEALING MATERIAL

Free folder, with engineering data and specifications, tells how industries use INNER-SEAL applications to eliminate sealing problems.



Tough, flexible INNER-SEAL has many uses . . . as insulation, cushioning, gasketing . . . in the automotive, railway and refrigeration fields, and in countless other fields of manufacture. INNER-SEAL's patented construction—spring steel molded in live sponge rubber—makes an effective, pressure-tight seal. Neoprene coated INNER-SEAL is waterproof . . . resists temperature extremes, sunlight, humidity, grease, oil and abrasion. It fits snugly into corners, around curves—lasts for years.

INNER-SEAL is stocked in standard dimensions and colors. Heavy-duty type available in black. Special types or colors made to order.

INNER-SEAL is constantly solving all sorts of sealing problems. If *you* have one — why not try INNER-SEAL?

FREE SAMPLES
and complete information
WRITE TODAY

BRIDGEPORT FABRICS, INC., BRIDGEPORT 1, CONN.

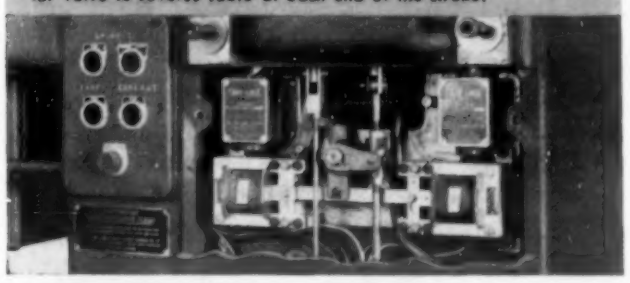
If you write maker identify as **IEN - 1814**

On 15 years experience— KENT OWENS TOLEDO OHIO has this to say:

"we specify Snap-Lock Limit Switches and Namco Solenoids on all the standard and special machines we build because of their dependable controls with trouble-free long life"

L. F. Rothert,
Director of Engineering
Machine Tool Division

On No. 2-20 Kent-Owens Production Type Milling Machine—the double Limit Switch and Solenoid combination shifts hydraulic selector valve to reverse table at each end of the stroke.



NOTHING determines the efficiency of your production equipment, and the ultimate cost of its product, so much as the often hidden but vital controls that insure its split second precision, and elimination of downtime losses.

That's exactly the function and the guarantee behind Snap-Lock Switches, designed with separate sealed off mechanical sides, and of Namco "Stellite"-Weld Solenoids. Each is a patented product.

Built first to improve controls—"built with machine tool ruggedness"—for our own Acme-Gridley Automatics, these electrical devices are now specified as standard equipment by 90% of this country's machine tool builders alone. Army, Navy and Aircraft suppliers specify them used singly and in combination. Other uses in valves, clutches, switches and innumerable devices, number in thousands.

If you need to step up a cycle of operation—get rid of mechanical wear, save space and insure more dependable, continuous control of your production, ask our Engineers to help you "design one in" to your machine or process. Engineering specification catalogs—Limit Switches EM-51; Solenoid EM-52.

The NATIONAL ACME COMPANY
178 EAST 131st STREET • CLEVELAND 8, OHIO

ACME-GRIDLEY BAR and CHUCKING AUTOMATICS
1-4-6 and 8 Spindle • Hydraulic Thread Rolling Machines • Automatic Threading Dies and Taps • Limit, Motor Starter and Control Station Switches • Solenoids • Contract Manufacturing

If you write maker identify as **IEN - 1816**

DRIVE . . Variable speed control for dc. motor from an ac. line

Source: ELECTRO PRODUCTS LABORATORIES INC.
4501 N. Ravenswood Ave., Dept. IEN, Chicago 40, Ill.

Mounts on machine

Illustrated is application of the company's new electronic variable speed control for the motor on a Sheldon lathe. AC. input to a power supply is rectified to supply dc. power for the motor field and armature under control of a speed selector knob. A reversing switch beneath the selector completes the installation. The control is available for use with fractional to 1-hp. motors for quick stepless speed change.

If you write maker identify as **IEN - 1817**

CAPACITORS . . Metal cased units, impregnated and hermetically sealed

Source: CORNELL-DUBILIER ELECTRIC CORP.
1000 Hamilton Blvd., South Plainfield, N. J.

Bulletins NB149 and 153

Series BTY and WY are new paper and foil capacitors impregnated with the company's solid thermosetting material that will not soften, crack or leak at operating temperatures to 130 deg. C. Fixfil trade names the impregnating material. Operation can be maintained in a temperature range from minus 55 to plus 130 deg. C. without derating. These temperature characteristics meet requirements of JAN-C-25 Characteristic "E".

Series TWY designates a second metal cased design in which the Fixfil impregnated units are fabricated with non-inductive extended foils soldered to the lead wires and hermetically sealed in tubular cases. These units are available in four case styles in the Demicon Series. They also meet specifications JAN-C-25 Characteristic "E".

If you write maker identify as **IEN - 1818**

TESTING . . Instrument stand supports three instruments adjustably

Source: BECKMAN INSTRUMENTS INC.
Box 296, Station A, Dept. IEN, Richmond, Calif.

Laboratory technique

Tek-Stand Model 901 is a new instrument stand with adjustable arms assembled on a vertical column secured in a weighted base. Also in the base are multiple ac. outlets for the power cords to the instruments on the arms. The new unit permits adjustment to convenient reading angles and minimizes bench space required for a test setup.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as **IEN - 1819**

...for finer finishing

Whether you grind, smooth or polish metal, wood, plastics, leather or rubber, there is a standard or special Jewel Brand Velvet Joint Abrasive Belt designed and made to help you do a better job . . . faster . . . at a lower cost.

Select the right one for *your* particular requirements now. Send for the new, revised Jewel Brand Abrasive Products Catalog and Price List today. Abrasive Products, Inc., 541 Pearl Street, South Braintree, Mass.

JEWEL BRAND *coated* **ABRASIVES**

If you write maker identify as **IEN - 1820**

J-M BLAZECRETE builds longer lasting refractory linings...

That's why it pays you to use this hydraulic setting refractory for temperatures to 3000F

Blazecrete* linings last longer because they resist spalling, withstand slagging action, and are not harmed by rapid temperature changes.

Thus you cut down on refractory maintenance costs and you save on labor costs, too, because Blazecrete goes on fast. For troweling, just mix Blazecrete with water as you'd mix ordinary concrete . . . then slap-trowel it in place. When gunned, it adheres readily with a minimum of rebound loss. Either way, Blazecrete goes on fast without laborious ramming or tamping.

Three types of hydraulic-setting Blazecrete are available.

*Reg. U. S. Pat. Off.

3X BLAZECRETE—For temperatures through 3000F. Excellent for forge furnace linings, lime kilns, burner blocks, soaking pits, and industrial boilers.

STANDARD BLAZECRETE—For temperatures through 2400F. Can be used by boiler manufacturers to replace fire clay tile in wall construction.

L. W. BLAZECRETE—For temperatures through 2000F. An insulating refractory . . . light in weight, low in thermal conductivity.

For full details, send for Brochure RC-28A. Write Johns-Manville, Box 60, New York 16, N.Y. In Canada, 199 Bay St., Toronto 1, Ontario.

Johns-Manville BLAZECRETE
BUILDS BETTER REFRACTORY LININGS

If you write maker identify as **IEN - 1821**

DODGE TAKE-UPS

— THEY'RE MODERN
— 7 TYPES
— ASK ABOUT THEM!

MODERN, rugged, *dependable!* A great range of types and sizes—for everything from light loads to heavy loads. Babbitted, Bronzoil, SC Ball Bearing, Dodge-Timken Type E Roller Bearing, Angle Frame, Protected Screw. Shaft sizes from 1/2" to 4". Travel from 4" to 48". Stocked by Dodge Distributors. Write us for details.

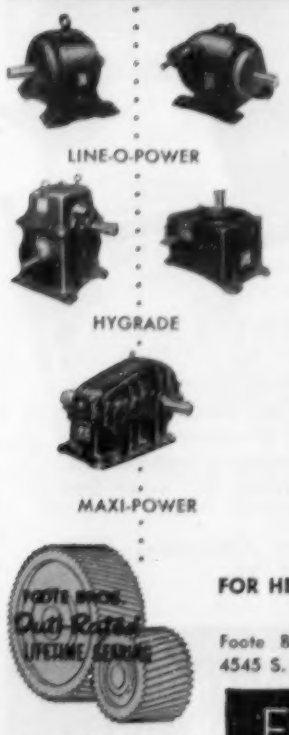
DODGE MANUFACTURING CORPORATION, 600 Union St., Mishawaka, Indiana

DODGE
of Mishawaka, Ind.

FIRST IN POWER TRANSMISSION MACHINERY

If you write maker identify as **IEN - 1822**

Set the Pace at SLOW SPEED with FOOTE BROS. DRIVES



This Trademark Stands for the Finest in Industrial Gearing

No matter how tough the job, you step down high speeds with ease when Foote Bros. Drives do the work. There's a complete line with an extremely wide range of ratios and capacities—a drive to meet all requirements for heavy-duty service. Solve your slow speed drive problems through the finest gearing in the most compact design—Foote Bros. Drives.

FOR HELPFUL, DETAILED INFORMATION PLEASE WRITE: Dept. IEN

Foote Bros. Gear and Machine Corporation
4545 S. Western Boulevard, Chicago 9, Illinois

FOOTE BROS.
Better Power Transmission through Better Drives

If you write maker identify as IEN-1823

Model C67AD

POWERFUL Drives staples with far greater force, faster and with less effort than is possible with hand-operated machines.

FAST One-hand, trigger operation. Loads quickly with ¼", ⅜" or ½" staples.

3 MODELS Available with 3 types of clinching blade: "C" blade and "openhead" blade for sealing overlapped flaps of corrugated containers, and straight blade for ordinary stapling.

Write for Bulletin 272. BOSTITCH, 642 Mechanic Street, Westerly, R. I.

FASTEN IT BETTER AND FASTER WITH

BOSTITCH®
STAPLERS AND STAPLES

If you write maker identify as IEN-1824

hand stoning with

HARD ARKANSAS* FILE

boosts tool life, jumps output 318%

● One tool room manager reports that by stoning a milling cutter after regular grinding he not only increased the life of the tool but was able to jump output on a magnesium casting from 67 to 280 parts. Master machinists and tool makers know that properly sharpened tools cut faster, longer, and more economically. They also know that there is no better way to sharpen a tool than final hand stoning with an INDIA® Oilstone or HARD ARKANSAS File. There's a size and shape for any job. Just ask your distributor for them.

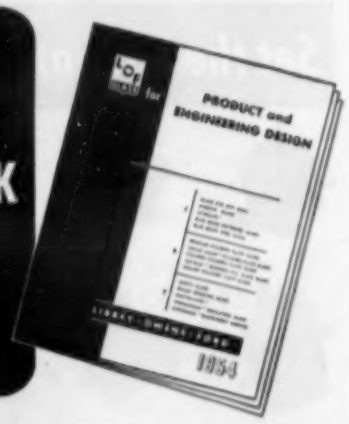
GET THIS HELPFUL BOOK *on the advantages of hand-stoning cutting tools. Address Behr-Manning Corp., Troy, N. Y., Dept. IEN-2.*

®*Trade-marks

BEHR-MANNING ▲ COATED ABRASIVES ▲ SHARPENING STONES ▲ PRESSURE-SENSITIVE TAPES

If you write maker identify as IEN-1825

NEW 1954 DESIGN BOOK FREE!



See how you can use glass in your products to replace costlier materials. How L·O·F Distributors can provide you with glass that's heat resistant, heat absorbent or heat insulating; electrically nonconductive *or* conductive; patterned or plain; flat or curved; transparent, translucent or opaque. Write for your free copy of SPD-54 today.

Libbey·Owens·Ford Glass Company, 9224 Nicholas Bldg., Toledo 3, Ohio.

L·O·F GLASS · Conveyflex · FIBER-GLASS

LIBBEY · OWENS · FORD GLASS COMPANY

If you write maker identify as IEN-1826

CONVEYING . . Metal apron assembly of piano-hinged load carrying pans

Source: LINK-BELT COMPANY
307 N. Michigan Ave., Dept. IEN, Chicago 1, Ill.

Illustrated Folder 2470

Castings, cereals, chips, granular materials, scrap that is hot, cold, sharp or abrasive can be carried horizontally and up and down 45-deg. inclines on the company's recently augmented line of apron conveyors. The individual pans, that make up the apron assembly, are interlocked at the articulation points to provide a minimum of opening through which material might seep and to minimize tendency to wedge or pinch materials being conveyed.

Perforated pans can be supplied to drop liquids out of the materials. The pans can be shaped flat, semiflat or deep bucket type, the latter to handle materials up and down steep inclines as well as to increase the load carrying capacity.

Widths range from 12 to 48 inches. Pan material can be steel, stainless steel, aluminum or other specified material. Pusher bars can be added. Pan mounting can be specified with full chain and rollers on both sides, with half chain and rollers on both sides, with outboard rollers, but no chain, to support the pans on rails and plain without rollers or chains for short runs with relatively small pull.

If you write maker identify as IEN-1827

WOODWORKING . . Portable saw, universal motor, 6 to 9 in. blade

Source: BLACK & DECKER MFG. CO.
715 E. Pennsylvania Ave., Dept. IEN, Towson 4, Md.

Guide knob at front

New assembly, for a 6-in. blade, has been added to the company's heavy duty line of portable circular blade saws. At the same time, the 7, 8, and 9-in. assemblies have been redesigned to improve support with a new shoe to adjust for depth or angle of cut and to retract the lower blade guard to make pocket cuts. Operation is on 110-volts ac.

Maximum depth of cut is 2 to 3¼ in. when the blade is set square. The 7-in. model has a maximum depth of 1¾ in. when its blade is at 45 degrees. A combination rip and crosscut blade is standard with each unit. Carrying case, rip fence, saw protractor and a selection of blades are available.

If you write maker identify as IEN-1828

Seat applied parking brake is now available to order on the engine driven industrial trucks made by Yale and Towne Mfg. Co., 11000 Roosevelt Blvd., Dept. IEN, Philadelphia 15, Pa. The brake is set when the operator stands up. A time delay relay permits the engine to operate for the following three minutes and then shuts it down.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN-1829

If you write maker identify as IEN-1830

ANOTHER BONDACTOR APPLICATION

From Concrete Repair to Sandblasting . . .

A BONDACTOR Will Do It BETTER

Concrete, refractories, other cementitious materials — BONDACTOR guns them all. Use this versatile machine for a recoating job in the morning — a waterproofing job in the afternoon. A BONDACTOR will save you time, money and manpower on countless day-in and day-out maintenance jobs. Many new construction applications, too.

THREE MODELS AVAILABLE

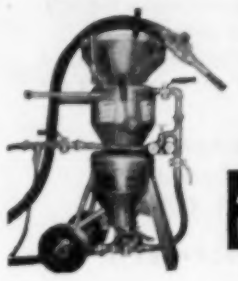
Model 750. Capacity: ½-¾ cu. yd. per hr. Operates with 75 or 105 CFM compressor.

Model 1250-S. Capacity: ¾-1½ cu. yds. per hr. Operates with 105 CFM compressor.

Model 1250-L. Capacity: 1½-3 cu. yds. per hr. Operates with 210 CFM compressor.

Capacities vary with material being gunned and with specific operating conditions.

All BONDACTORS can be operated from either plant or portable air compressors.



Write Today For Full Information
Please Indicate Intended Use

AIR PLACEMENT EQUIPMENT COMPANY
1006 W. 24th St. • Kansas City 8, Mo.

If you write maker identify as IEN-1831

Overhead Heaters a Maintenance Headache?

TRY TORNADO®

Periodic cleaning of the plant heating system used to be a real problem for the Great Lakes Spring Division of Rockwell Spring & Axle Corporation. Heaters would clog with dust, preventing proper circulation.

The trouble was that blowing out 75 unit heaters hanging 14 feet above the floor caused a dust storm that required a major cleanup of machinery and equipment afterward. And the job had to be done on overtime when the rest of the plant was shut down.

That was before Tornado Vacuum went to work. Now it takes about 3½ hours to do the whole job. There's no climbing up ladders and no dust problem during or after cleaning . . . it's done during the regular work shift, too.

Tornado makes quick work of cleaning machines and other equipment — gets into corners and behind machinery where sweeping is practically impossible. The Tornado does both wet and dry pickup, so cutting oil and water are no problem. Find out how the Tornado can help your housekeeping headache.

WRITE FOR BULLETIN 600

BREUER ELECTRIC MFG. CO.
5108 North Ravenswood Avenue • Chicago 40, Illinois

If you write maker identify as IEN-1833

RELIEVE EMBRITTLEMENT

with a DESPATCH "RS" OVEN

This Despatch RS-3 oven is used 16 hours a day at temperatures up to 550° F. Installed at the St. Paul, Minn. maintenance shops of Northwest Airlines, it is used in several important baking procedures. This includes stress relief from welding as well as relief of hydrogen embrittlement from plating on crank cases, landing gears, couplings, propeller shafts, knuckle pins, brake discs and other parts.

Specifications: Despatch RS-3 Oven, 48" x 48" x 72" Inside Electric: 17 or 26 KW; Gas: 83 CFH. 22 ga. steel with 3" or 5" Rockwood insulation.

Wherever electroplating is done, there's a Despatch Oven available for relief of embrittlement. Physical properties of the steel are largely restored and hydrogen is substantially removed by the heating process. Plated parts are usually baked from 1 to 5 hours at 375°-650° F. It is recommended that the baking operation begin immediately after plating and before the plated surfaces have been otherwise treated.

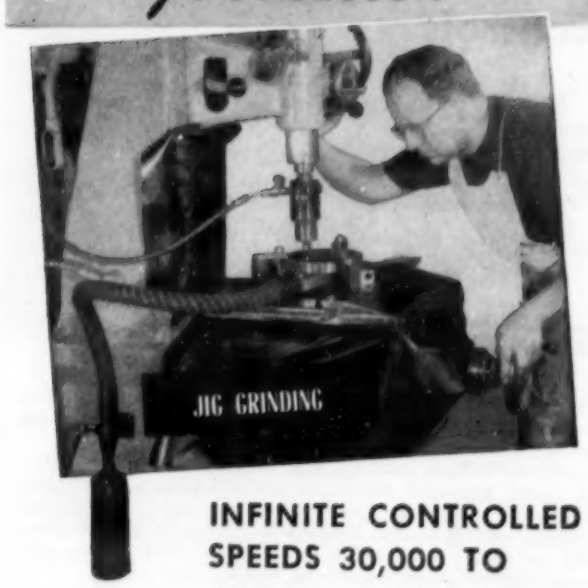
Write for fully illustrated No. 200 Bulletin

DESPATCH OVEN CO. Established in 1902

DESPATCH OVEN CO.
337 Despatch Building
Minneapolis 14, Minn.

If you write maker identify as IEN-1834

JIG GRINDING ACCURACY *guaranteed**



INFINITE CONTROLLED SPEEDS 30,000 TO 65,000 R. P. M.

Easily connect jig grinder to jig borer or mill

Then you can finish grind in hardened steel to "tenths" . . . jig grind dowel holes square with a ground base . . . move location of holes in hardened steel blocks . . . jig grind interchangeable holes in hardened sections . . . grind small holes with diamond impregnated mandrels . . . grind contours and relief with tungsten carbide burrs . . . grind radii in die sections . . . eliminate jig bushings in tools where close spacing is essential.

Other infinitely controlled air driven spindle applications

Place spindle on most any machine. Use it for finishing contours on hardened steel working surfaces . . . burring or milling die castings . . . routing wood contours . . . carbide milling or finishing slots . . . finishing holes in hardened steel to "tenths" . . . grinding with diamond wheels, carbide burrs, or diamond impregnated mandrels.

***Advantages*—10 micro finishes using carbide mills . . . 6 micro finishes using mounted points, operates at any angle . . . air driven, air cooled, overheating prevented . . . speed controlled at optimum point . . . 3⅝" long motor uses little working space . . . By controlling speed at any point you abolish need for many constant speed spindles.**

For immediate quotation please state machine tool application. Get this manual of photos showing operations Vulcanaire performs.

*Dependably accurate to "tenths"

Vulcanaire
It's built by toolmakers for toolmakers

VULCAN TOOL CO., 734 LORAIN, DAYTON 10, OHIO

If you write maker identify as IEN-1836

RECORDING . . Multi-point instrument cycles to trace 24 process variables

Source: FIELDEN INSTRUMENT DIVISION
2920 N. 4th St., Dept. IEN, Philadelphia 33, Pa.

About $45 per point

Circular chart on this new instrument is divided into four equal parts. It employs a mechanism to rotate it periodically so data can be traced in each of the four quadrants. The pen is a turret design for traces in different colors in six divisions in each quadrant to make a total of 24 individual traces. A synchronous chart drive motor keeps the chart in "time" so each quarter can be made to correspond to 1, 8, 24 or 168 hours.

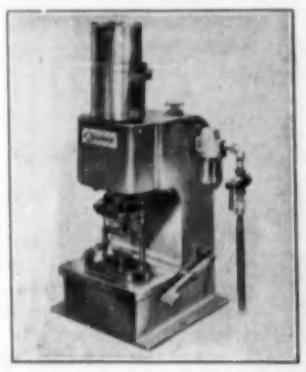
The print cycle is 5 sec. per point and the total cycle for all 24 points is 2 minutes. The cycling mechanism can be switched off so the recorder can operate as a standard single point unit.

Two instrument designs include the Tektolog and the Null Balance. The former can be used to record most electrical quantities or can be applied in a two-wire dc. telemetering installation. It is accurate within 1 per cent of full scale. Inputs range upward from 50 micro-amps. dc. and 30 millivolts dc. The Null Balance instrument is particularly suited for use with resistance bulb thermometers, conductivity instruments and displacement with strain gages or linear differential transformers. It also applies in 3-wire telemetering.

If you write maker identify as IEN-1837

PRESS . . Air hydraulic design rates to 5 ton on 100 lb. air pressure

Source: ALLIANCE MFG. CO.
47 Lake Park Blvd., Dept. IEN, Alliance, Ohio



For production use

The 2-in. ram in this new Model-500 Pnu-Draulic press moves through a 3-in. maximum stroke. It is operated by low pressure for approach to the work. Then it connects automatically into high pressure for the power stroke. The point of changeover can be set so it will not take place unless work is correctly positioned. Air pressure from a shop line enters the press through a dirt filter and then connects to a booster mechanism that operates the main ram. The arrangement calls for consumption of ¼ cu. ft. of air per stroke.

Construction includes a two-handed safety trip to protect the operator, a built-in timer for regulated dwell and cycle control, and a steel welded frame. Weight is 300 pounds. The press occupies a bench space of 1⅓ square feet. Typical operations are staking, riveting, forming, piercing, crimping, sealing, broaching, trimming, marking, flanging.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN-1838

NEW

SWEEPS FAST, exceeding 100,000 sq. ft. per hr.

DUMPS MECHANICALLY in less than 24 seconds.

MORE MANEUVERABLE. Turns in only 60" radius.

PICKS UP bulky debris as well as dirt, dust.

...and built for YEARS of service!

Rugged NEW "Model 75" reverses instantly; is built for heavy duty work. Also in smaller models.

TENNANT

Model 75 Power Sweeper

Pays for itself in about 90 days . . . and is built for years of tough round-the-clock sweeping. Drives like a car; has exclusive instant reverse feature, automotive steering, mechanical dumping. Covers 48" path (with sidebrush). *Write for details!*

G. H. TENNANT CO.
2574 N. 2nd St., Minneapolis 11, Minn.

TENNANT Established 1870

INDUSTRIAL FLOOR MACHINES
OFFICES IN PRINCIPAL CITIES

If you write maker identify as IEN-1839

Now Available in 3, 4 and 5 ft. Sections

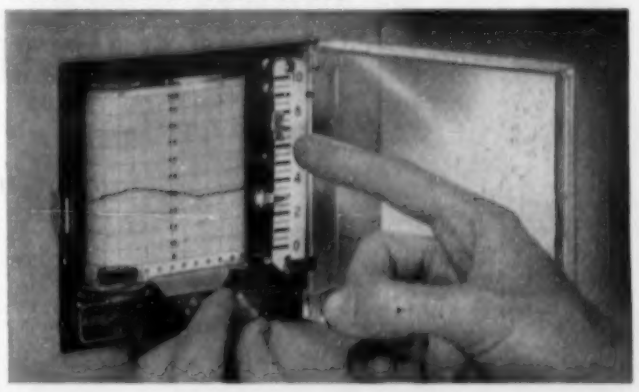
The new AAF Multi-Duty Filter is tailored to fit the tight spots! Addition of the 5-ft. section permits most economical combination of filter widths to fit limited space. Over-all depth of filter is reduced 5½ inches.

Greater versatility, lower installation costs, important space savings—you get them with the new Multi-Duty, plus the proved performance of America's "most specified" automatic, self-cleaning air filter. Write for Bulletin 241.

AAF American Air Filter COMPANY, INC.
335 Central Avenue, Louisville 8, Kentucky
American Air Filter of Canada, Ltd., Montreal, P. Q.

If you write maker identify as IEN-1840

WHAT'S NEW AT BRISTOL . . .



Instrument men call Bristol's new METAGRAPHIC Recorder

"...the biggest little instrument"

• Designed with the operator foremost in mind, the air-operated "human-engineered" Bristol METAGRAPHICS are easy to read, with numerals and calibrations sharply defined for maximum visibility.

The METAGRAPHIC's continuous valve-position indication, which is separate from the set-point indication, gives continuous data on control valve position and level of process operation. No switching is necessary to get reading.

Write us today for the whole story on the "human-engineered" METAGRAPHICS. The Bristol Company, 107 Bristol Road, Waterbury 20, Conn.

BRISTOL Points the way in human-engineered instrumentation

AUTOMATIC CONTROLLING, RECORDING AND TELEMETERING INSTRUMENTS

If you write maker identify as IEN-1841

Backstand belts triple production!

Send for Armour's free booklet to learn this amazing method!

Metal polishing has hit a new production high with backstand belts. They cut faster, cooler than set-up wheels—and cut down on the number of operations. In some plants, backstand belts have *tripled* production! To learn more about this modern method, send for Armour's free booklet, "Backstand-Belt Polishing."

Mail this coupon today

Please send booklet "Backstand-Belt Polishing".

Name ..... *Title* .....
Company .....
Address .....
City ..... *Zone* ..... *State* .....

ARMOUR *Coated Abrasives*

Armour and Company • North Benton Road • Alliance, Ohio

If you write maker identify as IEN - 1842

Tote Your Tools to the Job

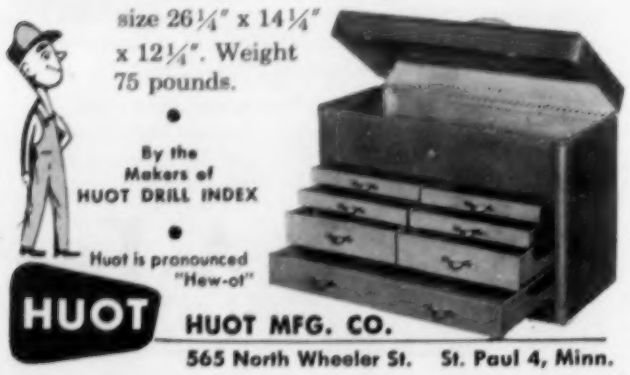
with the handy

HUOT MACHINISTS CHEST

MODEL 104. Cork lined protective drawers . . . one turn of the key fastens cover and all drawers with patented lock . . . smooth, streamlined, easy-to-clean . . . holds a full 18" scale. Over-all 19¾" long, 13¾" high, 8¾" deep and weighs only 26 pounds.

MODEL 105. Although non-portable, it's a "king-size" chest for tools up to 24". 9 drawers. Overall size 26¼" x 14¼" x 12¼". Weight 75 pounds.

Ask your distributor, or write for bulletin



By the Makers of HUOT DRILL INDEX

Huot is pronounced "Hew-ot"

HUOT

HUOT MFG. CO.
565 North Wheeler St. St. Paul 4, Minn.

If you write maker identify as IEN - 1843

NEW RAYMOND CATALOG

Then this new RAYMOND catalog is for you . . .

In it, you'll find 24 pages packed with hydraulic equipment that can improve plant efficiency. You'll discover new ways to move materials . . . and to handle them at the machine as well.

Be sure you have a copy of this RAYMOND Catalog before investing in additional handling equipment. Simply fill in and mail the coupon . . . no charge, no obligation.

RAYMOND

ELECTRIC INDUSTRIAL TRUCKS HYDRAULIC ELEVATING EQUIPMENT

The RAYMOND CORPORATION
3524 Madison St., Greene, N.Y.

Please send me your new RAYMOND Hydraulic Equipment Catalog.

NAME _____ TITLE _____
COMPANY _____
STREET _____
CITY _____ STATE _____

If you write maker identify as IEN - 1845

HAMMER . . Portable pneumatic with set of chisels for utility duty

Source: INGERSOLL-RAND COMPANY
746 Morris Ave., Phillipsburg, N. J.

Good for maintenance

Impacutter MC-12 designates a new 3-lb., 13-oz. 7½-in. hammer and a set of chisels, all assembled in a metal carrying case. The chisels are retained in the hammer throat to keep them in safe position. They can be changed quickly. The hammer is controlled at a trigger for any action between light tapping and full power impact. Typical operations are sheet metal cutting, goo scraping, bolt and nut cutting, rivet cutting and punching, spot weld busting.

If you write maker identify as IEN - 1846

PROTECTING . . Cover goggles to fit over prescription glasses

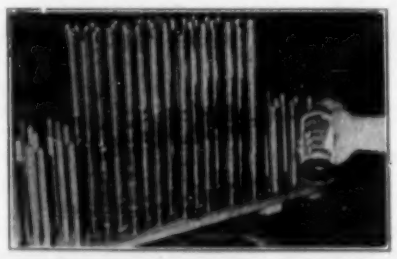
Source: AMERICAN INDUSTRIAL SAFETY EQUIPMENT CO.
Lakeside Ave., Dept. IEN, Cleveland 14, Ohio

Light weight

Round lenses, 50 mm. in diameter, are fitted into aluminum rims equipped with side shields, either plain or baffled, in this new Eye Gard Imperial goggle. Assemblies with the baffled side shields and specification glare filter lenses for welders, as well as units with perforated side shields and clear lenses for chippers and grinders, are included in the line.

If you write maker identify as IEN - 1847

Vapor phase inhibitor crystals are available now in a pressurized dispenser for application upon pressing the can nozzle. The nozzle meters a gram of the material every 10 seconds. The material is non-flammable, non-toxic and harmless to the skin. Application is on ferrous metals to provide fairly long protection against corrosion, without being enclosed, or long time protection when enclosed in approved manner. Protective Coatings Corp., 9 So. Fairview Ave., Dept. IEN, Park Ridge, Ill., is the manufacturer.



All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 1848

Penmetal

EXPANDED METAL MESH

makes a little metal go a long way

FOR PARTITIONS • PANELS
GUARDS • SHELVING
ENCLOSURES • GRILLES
REINFORCING • SCREENS

Penmetal Expanded Metal is sheet metal—slit, then stretched up to 10x original area. No "scrap", no waste.

Penmetal Expanded Metal weighs far less—up to 90% less than solid sheets.

"Diamond" truss pattern adds extra strength, extra rigidity. Even so, sheets can be cut, bent, curved, flared . . . also welded, brazed, soldered . . . can be used plain, galvanized, tinned, polished, painted or enameled.

Available in carbon steel and stainless—copper—brass—aluminum—monel—inconel . . . large or small mesh . . . light or heavy gauge.

For more information, write for free Bulletin EM-42.

Penmetal

PENN METAL COMPANY, INC.
General Sales Offices:
205 E. 42nd St., New York 17, N. Y.

BOSTON, PHILADELPHIA, WASHINGTON, PARKERSBURG, W. VA., DETROIT, CHICAGO, DALLAS, LOS ANGELES, SAN FRANCISCO, SEATTLE

If you write maker identify as IEN - 1849

ALLIED world's largest distributor of ELECTRON TUBES FOR INDUSTRY

ALL BRANDS IN STOCK
AMPEREX • G.E.
EIMAC • RCA
RAYTHEON
SYLVANIA
TAYLOR • TUNGSOL
VICTOREEN
WESTINGHOUSE
and others

ALL TYPES IN STOCK
Power Tubes
Rectifiers • Phototubes
Radiation
Sub-Miniature
Oscillograph
Transistors
Ignitrons • Thyratrons
Image Orthicon
Klystron
All Special Purpose Tubes

IMMEDIATE DELIVERY FROM STOCK

ALLIED stocks for *quick shipment* the world's largest distributor inventory of special-purpose electron tubes. We specialize in supplying the needs of industrial, broadcast, governmental and other users. To save time, effort and money—phone, wire or write to ALLIED for fast shipment.

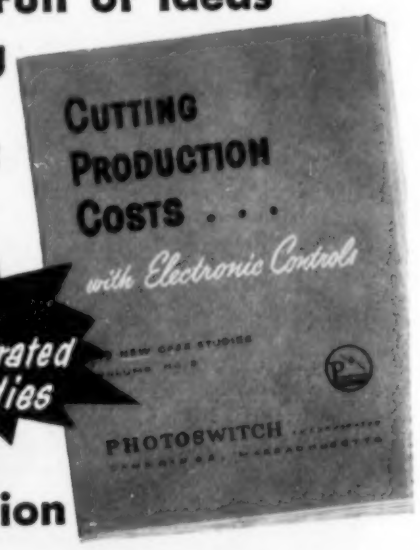
Refer to your ALLIED Catalog for all electronic supplies. Write today for a FREE copy of the complete 268-page 1954 ALLIED Electronic Supply Guide.

ALLIED RADIO
100 N. Western Ave.
Dept. 14-B-4, Chicago 80, Ill.

Everything in Electronics from One Dependable Source

If you write maker identify as IEN - 1850

FREE! Full of ideas for saving with Electronic Controls



45 new illustrated case studies

1953 Edition

A completely revised edition of the handbook that has become the "bible" of electronic control for thousands of engineers and production executives.

Newly edited, with 45 new case studies showing how standard packaged electronic controls have solved many industrial problems you're likely to meet. It explains clearly and factually, without hocus-pocus, tested ideas for achieving new efficiency through "Electron-eered" counting, weighing, measuring, timing and cycling.

SEND FOR YOUR COPY NOW!

PHOTOSWITCH INC.
Dept. P7-2, 77 Broadway, Cambridge 42, Mass.

If you write maker identify as IEN - 1851

eliminate DIFFICULT FABRICATING
reduce EXPENSIVE MACHINING
specify LEBANON STAINLESS STEEL CASTINGS

Fabricating and machining stainless steels and other high alloys can be an unnecessarily difficult and expensive job. But have you tried *this answer* to the problem . . . buying Lebanon castings made to your specifications? These precise Lebanon castings are held to close tolerances to reduce machining and fabricating expense to a minimum.

Lebanon sales engineers are the men to see . . . they'll be glad to show you how craftsmen-made Lebanon CIRCLE L castings can cut your costs!

Write for your copies of Lebanon's Reference Charts—these fact-full data sheets should be in your files.

Dept. M, Lebanon Steel Foundry, Lebanon, Pennsylvania

Lebanon
CARBON, SPECIAL ALLOY AND STAINLESS STEEL
Castings

If you write maker identify as IEN - 1852

If you write maker identify as IEN - 1853

MODEL E: 5 sizes, ¼ to 2 ton. Flexible wire rope-cable lift, pendent push button control. Lifting speeds 15 to 38 f.p.m.

MODEL EC: 3 sizes, ¼ to 1 ton. Welded alloy steel link chain lift, pendent rope control. Lifts adaptable up to 66 ft.

COMPARE these new Chester Electric Hoists... for efficiency of design . . . rugged durability... quality features of motors and parts . . . and for easy, smooth operation.

Chester Electric Hoists in your plant *can pay for themselves* in a remarkably short time . . . in cutting costs of your present load lifting and spotting operations.

Ask your distributor for complete information on the new Chester Electric Hoists, or write us now for these descriptive specification folders, E 853 and EC 953.

CHESTER HOIST DIVISION
The National Screw & Mfg. Co.
Lisbon, Ohio

National PRODUCTS — FASTENERS, MODELL CHAINS, CHESTER HOISTS

If you write maker identify as IEN - 1855

TESTING . . Stress-strain recorder for use on universal testing machine

Source: BALDWIN-LIMA-HAMILTON CORP. Paschall Post Office, Philadelphia 42, Pa.

Shows test results

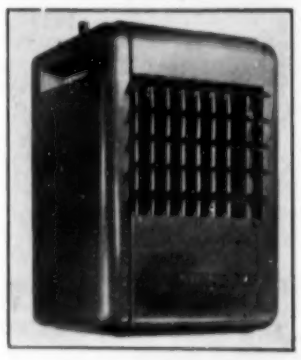
Strain is recorded on a chart mounted on a rotating drum in this new Model SRA-1 instrument. It employs indications from wire strain gages or SR-4 extensometers operating in the company's Model FGT universal testing machine. Load is recorded by movement of the stylus parallel to the axis of the drum through mechanical drive by the load indicator mechanism on the machine. In addition to application on the Model FGT series, the instrument can be employed on several other Baldwin machines.

Zero position of the stylus can be set at the middle of the chart and a 5-in. load record obtained for either 50 or 100 per cent of the indicator range. A full scale 10-in. load record is obtained when zero position is set at either end of the chart. Magnification ratios and measuring ranges are 50 to 500 to 1. They are selected by turning a switch. A strain gage selector provides nine ranges between 800 and 80,000 micro-inches when the instrument is employed with SR-4 strain gages. The recorder can be used with 1, 2 or 4 active gages in an external measuring circuit. Operation is on 110-volt ac. Accuracy for both load and strain measurements is within 0.2 per cent of the recorder range or 0.5 per cent of the recorded value. The chart winds on the drum from a 50-yd. roll at maximum strain recording speed of 1¼ in. per second.

If you write maker identify as IEN - 1856

HEATING . . Gas fired space unit, seven sizes to 200,000 btu. per hour

Source: WARREN WEBSTER & CO. 17th & Federal, Dept. IEN, Camden 5. N. J.



Bulletin B-1710 A

Slide mounted burner in this new unit heater is made with raised ports and is arranged to draw out for inspection and cleaning. The burner is provided with automatic control, pressure regulation and a safety pilot that prevents discharge of gas in the event that the pilot is extinguished. Products of combustion move upward through exchanger tubes to a flue connection in the rear near the top. A draft hood prevents reverse flow. Natural, manufactured, mixed or liquefied petroleum gas can be employed as fuel.

The motor driven fan is enclosed in a guard at the rear of the housing to blow air around the exchanger tubes and out through the louver equipped front. Seven sizes rate 25,000 to 200,000 btu. per hour input and 20,000 to 160,000 btu. per hour output. Air handling capacity is 400 to 2,900 cfm. on a fan speed of 1,050 rpm. on the smallest unit and 1,140 rpm. on the largest. The motor rating is 1/40 to 1/6 hp.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 1857

If you write maker identify as IEN - 1858

Solve Many Bearing Problems

- Resiliency resists poundout
- Permit dry operation
- Minimize abrasion failures
- Silent operation
- Lower friction
- Superior corrosion resistance
- Damp mechanical vibration
- Eliminate friction oxidation
- Operate in liquids
- Close fits
- Non-contaminating
- Extremely compact
- Light weight
- Low cost
- Longer life
- Less maintenance
- Bearing surface instantly replaceable

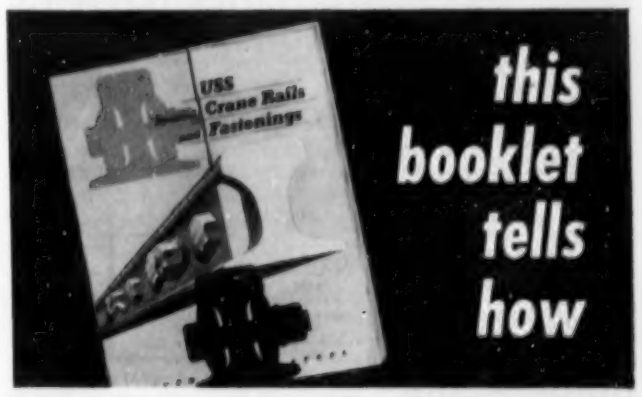
* For further information and the name of your local representative, write

THOMSON INDUSTRIES, Inc.
Dept. 8
Manhasset, New York

Also Manufacturers of BALL BUSHINGS . . . the Ball Bearing for Linear Motions

If you write maker identify as IEN - 1859

Keep cranes in service Cut maintenance costs



● This informative booklet on U·S·S Special Crane Rails and Fastenings can help you reduce crane and runway maintenance costs. It describes our three Special Crane Rail Sections—which were designed to give longer service under heavy wheel loads—and shows a special technique of tight-joint-assembly which, when combined with a new conception of "floating-rail" fastening, will result in fewer delays in crane operation and less maintenance expense.

To get your copy, just send your name and address to United States Steel Corporation, Room 4202, 525 William Penn Place, Pittsburgh 30, Pa.

U·S·S SPECIAL CRANE RAIL SECTIONS USS

UNITED STATES STEEL

If you write maker identify as IEN - 1860

THE INSURANCE PREMIUMS YOU SAVE WILL PAY FOR THIS SAFETY FLOOR PLATE

When A.W. ALGRIP Abrasive Rolled Steel Floor Plate is installed in any plant, costly slipping accidents end and insurance premiums drop 'way down. ALGRIP assures non-slip foot safety in every step—even when wet or splashed with oil; gives a firm non-skid grip even on steep inclines.

Hundreds of tiny abrasive particles are impregnated *to a controlled depth of penetration* into each square foot of strong yet light weight steel plate. This exclusive ALGRIP feature provides a tough "grinding-wheel" grain that wear can't lick because heavy use only exposes new particles. And the insurance rates you save when accidents cease will pay for your ALGRIP installation.

Send today for full details on how non-slip fire-and breakage resistant ALGRIP can save money for you.

A.W. ALGRIP Abrasive Rolled Steel Floor Plate

ALAN WOOD STEEL COMPANY
CONSHOHOCKEN, PA.

Please send free booklet AL-3 on savings from safety with ALGRIP.

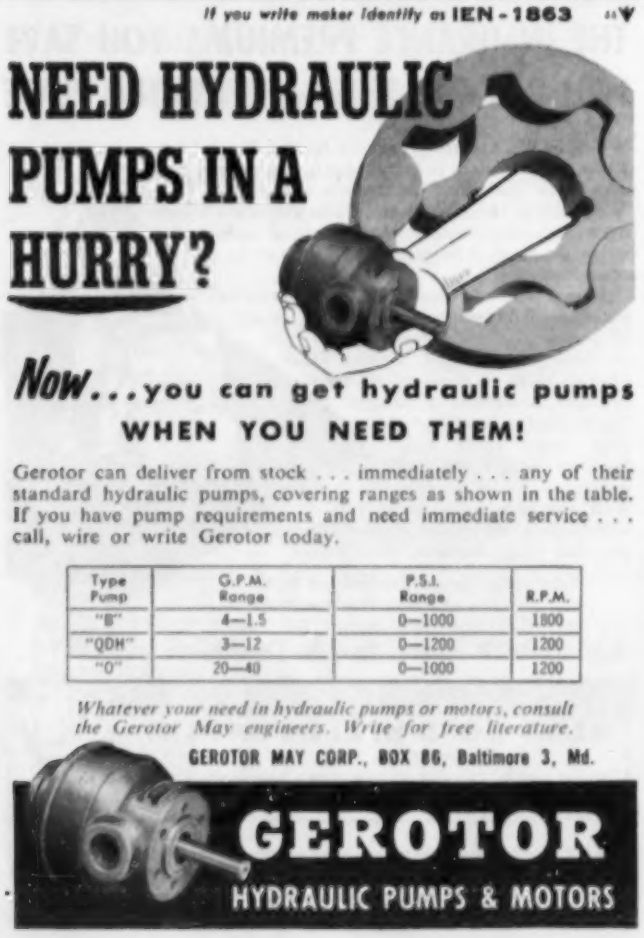
Name_____
Company_____
Address_____
City_____ Zone____ State____

If you write maker identify as IEN - 1861

Severance TOOL INDUSTRIES INC.
740 Iowa Avenue • Saginaw, Michigan

If you write maker identify as IEN - 1862

If you write maker identify as IEN - 1863



If you write maker identify as IEN - 1864

CIRCUIT BREAKERS . . Dust tight panel board for hazardous locations

Source: SQUARE D COMPANY
6060 Rivard St., Dept. IEN, Detroit 11, Mich.

Specified circuits

Dust from grain, coal, coke, metal, carbon black, cannot enter this new lighting and distribution panel board to interfere with operation of the enclosed circuit breakers. The new board meets the National Electrical Code requirements and is approved by Underwriters' Laboratories for Class II, Groups E, F, and G hazardous locations.

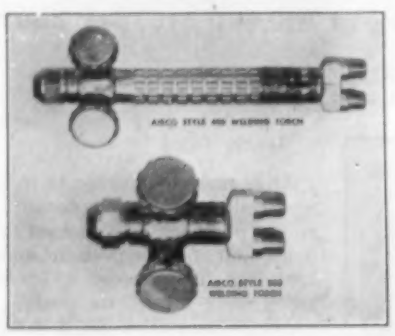
The breaker equipment is the company's thermal-magnetic quick-make quick-break design for ac. and dc. service. Branch circuit breakers are provided in ratings from 15 to 50 amp. single-pole and 15 to 100 amp. two and three-pole. Assembly is in an enclosure consisting of a formed steel box and a front with welded corners.

External dust tight handle mechanisms operate the branch breakers. Garlock packing is provided between the flanges of the box and the front which is held in place with swing bolts and clamps. Conduit hubs are seam welded to the top or bottom of the enclosure as specified for the main and branch circuit cables.

If you write maker identify as IEN - 1865

HEATING . . Oxy-acetylene torches for light welding, cutting, brazing

Source: AIR REDUCTION SALES CO.
1656 Lincoln Bldg., New York 17, N. Y.



Bulletin ADC 721

Airco 400, for welding and brazing operations, and Airco 300, for welding, lead burning, soldering, light production welding, are new in the company's line of oxy-acetylene equipment. Both are fitted with ball type oxygen and acetylene valves positioned for thumb adjustment. A variety of tips, mixers and extensions is available to meet a variety of applications.

Model 400 measures 5¾ in. in length, weighs 6 ounces. It is fitted with a special body for a firm steady grip. Model 300 measures 2½ in. in length and weighs 5 ounces.

If you write maker identify as IEN - 1866

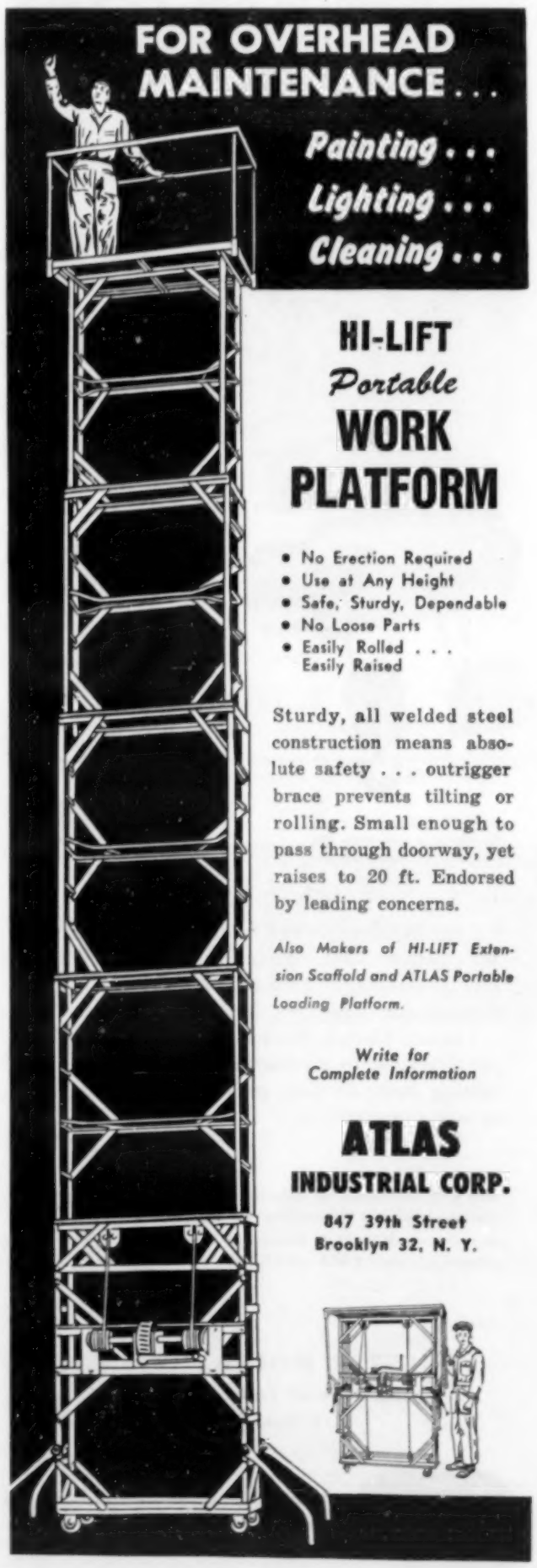
Titan centrifugal separators, made in Denmark, are available now in the United States through Pitmar Centrifugal Machine Corp., 10 E. Fayette St., Dept. IEN, Baltimore 2, Md. The machine will discharge extracted sludge automatically or manually, while it is operating, by turning a four-way valve located near the operator's position.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 1867

If you write maker identify as IEN - 1868

If you write maker identify as IEN - 1869

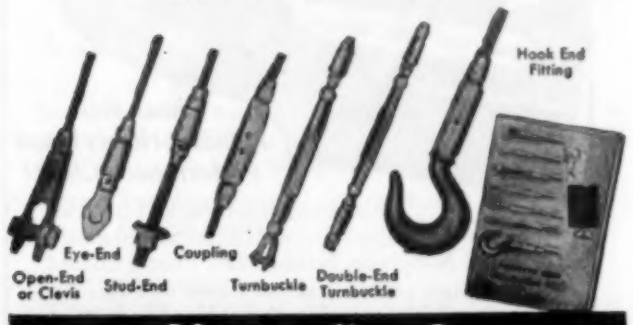


If you write maker identify as IEN - 1871

Cut out needless re-roping costs

USE ELECTROLINE WIRE ROPE FITTINGS

In minutes, ordinary labor can install Electroline fittings that will hang on for all time. Prolong wire rope life by damping vibration stresses thus eliminating wire rope fatigue at the fitting. Write for Electroline Catalog. It points out many savings—no cost.



Electroline Company
4121 SOUTH LA SALLE STREET
CHICAGO 9, ILLINOIS
IN CANADA: POWERLITE DEVICES, LTD., TORONTO

If you write maker identify as IEN - 1872

ASCO® BIG VALVE Values designed into SMALL Solenoid Valves

2-Way and 3-Way General Purpose Valves in the 1/8" to 1/2" Pipe Size Range

Design Features

- Capable of sustained fast repetitive operations over very long periods
- Snap action — opening and closing
- Full size orifices, assuring maximum unrestricted flow
- No closely fitted parts to make valve susceptible to jamming by small foreign particles
- Compactness — sizes to meet any restrictive space requirements

These small ASCO Solenoid Valves—examples of our design skills—may be just what you need for controlling automatically the flow of liquid or gas in your machine, instrument or pipe line. Complete details will be sent on request. If you have other control problems, why not let our engineers work on them? We have been serving industry in the field of electromagnetic controls for 65 years and can offer a great variety of Solenoid Valves covering many different services.

ASCO. General Purpose Packless Solenoid Valves for

Air, Gas, Water, Refrigerants, Light Oils, Heavy Oils and Other Non-Corrosive Fluids. 212°F. Maximum Temperature for Liquids and Gases; up to 450°F. for Steam (High Temperature Coils).

1. Bulletin 8262
   ASCO 2-Way Valve
   Pipe Size — 1/8" and 1/4"
   Maximum Pressure 1000 psi
2. Bulletin 8265
   ASCO 2-Way Valve
   Pipe Size — 3/8"
   Maximum Pressure 250 psi
   (Steam to 175 psi)
3. Bulletin 8268
   ASCO 2-Way Valve
   Pipe Sizes — 3/8" and 1/2"
   Maximum Pressure 475 psi
4. Bulletin 8314
   ASCO 3-Way Valve
   Pipe Size — 1/8"
   Maximum Pressure 125 psi
   (Other Small 3-Way ASCO Valves to 1/2" pipe size available)

ASCO Solenoid VALVES

Write for free pamphlet "Small Solenoid Valves"

Automatic Switch Co.
383 LAKESIDE AVENUE • ORANGE, NEW JERSEY

If you write maker identify as IEN - 1874

GRINDING . . Bench type machine for engraving cutters, lathe tool bits

Source: MICO INSTRUMENT CO.
81 Trowbridge St., Cambridge 38, Mass.

Also for special cutters

Cup type grinding wheel, 1½ in. in diameter, is mounted on a pre-loaded factory lubricated and permanently sealed ball bearing spindle in this new No. 295-A grinding machine. The spindle is mounted in a bracket secured to the machine base and is belt connected to a universal motor for operation on 110-volt ac. Spindle speed is 7,500 rpm. The machine weighs 21 pounds. It measures 10½ by 8½ by 8½ inches.

The work, primarily engraving cutters, is held in a collet chuck in a rotating adjustable swivel head. The head is mounted on a carriage that slides on enclosed keys and is positioned in line with the spindle axis by a drum graduated in 0.001-in. divisions. The tilting swivel base is indexed from 0 to 90 deg. and is held in place by a knurled locking thumb screw. The rotatable spindle in the head takes spring collets to ⅜-in. capacity as well as adapters for cutters of special design. A divided wheel and thumb operated latch provide for indexing to grind three or four cutter faces. List price with standard equipment is $125.

If you write maker identify as IEN - 1875

HEATING . . Infra-red glass panel for process heating to 660 deg. F.

Source: CORNING GLASS WORKS
Dept. IEN, Corning, N. Y.

500 to 3,500 watts

The heating element in this new panel unit is a sheet of Pyrex brand heat resistant glass with an electrically conductive film fired on the back surface. The element is backed with an aluminized steel reflector set into a steel frame. Electric contact is made to silver strips on the edges of the glass by spring loaded carbon buttons supported, with a brass bus bar, on molded porcelain blocks. Two panel sizes measure 1¾ in. in thickness. One is 13½ by 13½ inches, the other is 17½ by 21½ inches. Watt density ranges from 2.6 to about 9 watts per square inch.

Long wave length black body radiation, from the area source, provides temperature uniformity and makes possible efficient heat absorption regardless of the surface texture or color of the material being heated. Because the panels can be positioned within 3 in. of the work surface, it is possible to construct tunnels and towers that utilize practically all of the effective radiant heat area.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 1876

Extra thin . . . for cleaner, sharper-line masking. Greater *flexibility* . . . for masking curves faster. Extra *strength* . . . to hold positively yet strip off fast in one piece. Resists stains, oils, solvents—leaves no residue. Gives on-the-job speed and results for a faster, better job . . . *at lower cost.* Write for information and free samples. Mystik Adhesive Products, 2644 North Kildare Avenue, Chicago 39.

© MAP 1952 T. M. MYSTIK and THINFLEX Registered

If you write maker identify as IEN - 1877

For fast, accurate inspection and measurement

Fast, accurate, and requiring little skill to operate, the Kodak Contour Projector may well be the answer to your inspection, assembly, or measurement problems.

Few objects are too small or complicated for rapid, complete inspection under magnification with a Kodak Contour Projector. And you can handle large parts, too, for there's an unvarying 8 inches between lens and object at all magnifications from 10× to 100×. Surface illumination for checking blind holes, cavities, or other surface features is available by the mere flick of a switch.

To learn how the Kodak Contour Projector can be used in your plant, send for Booklet F1-68.

Special Products Sales Division
EASTMAN KODAK COMPANY
Rochester 4, N. Y.

the KODAK CONTOUR PROJECTOR

Kodak

If you write maker identify as IEN - 1878

FOR VALVES in Corrosive Service

"John Crane" Style 704 acid-proof packing is replacing all other forms of braided packing for valves in corrosive service, because it lasts as long as the valve itself. Reports from engineers and chemical plant operators point to completely satisfactory performance after two or more years of service—as compared to the normal 60-day life of blue asbestos packing under equivalent conditions.

Made of Teflon, Style 704 is impervious to practically all known acids, diluted or concentrated, hot or cold. Recommended temperature range is from −100° F. to +500° F.—at any pressure.

Style 704 is available in handy coil or spool form in a full range of sizes from 1/8" to 3/8".

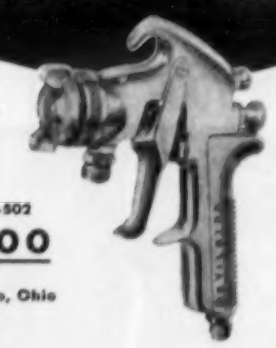
Send today for complete details. Ask for "John Crane's" booklet, The Best in Teflon. *Crane Packing Co., 1815 Cuyler Ave., Chicago 13, Ill.*

**Du Pont's trademark*

JOHN CRANE CRANE PACKING COMPANY

If you write maker identify as IEN - 1879

The Spray Gun INDUSTRY PREFERS



Model P-JGA-502
$32.00
F. O. B. Toledo, Ohio

The DeVilbiss P-JGA spray gun is a high speed, large capacity, production-type gun of exceptionally compact design. Its light weight, comfortable balance and easy action minimize fatigue. Has extra-capacity to handle even the heaviest spraying requirements. Sprays any finishing material. Can be fitted with various nozzles to produce a wide variety of spray patterns for regular and special uses. Write for full details.

DEVILBISS
THE DEVILBISS COMPANY
Toledo, Ohio
Santa Clara, Calif. • Barrie, Ontario • London, England

If you write maker identify as IEN - 1880

Add Years to Air Equipment Life— Use Filtered Air

All air lines collect moisture. Rust and dirt enter the lines, too, to clog lines, and shorten equipment life.

Give your air equipment top protection with Schrader Air Line Filters ahead of each air control unit. Schrader filters offer no restriction to full air flow, even after long use. Moisture is trapped in the bottom of the filter, can be drawn off through a drain cock.

See how Schrader Air Line Filters and other Schrader accessories can add to your effective use of air. Send for the Schrader catalog today.

A. SCHRADER'S SON
Division of Scovill Manufacturing Company, Incorporated
458 Vanderbilt Avenue • Dept. D-42 • Brooklyn 38, N. Y.

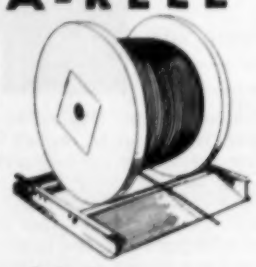
If you write maker identify as IEN - 1881

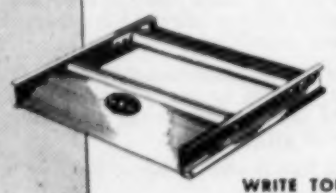
Time to Discard OLD-FASHIONED WAYS

Jacks . . props . . shores . . horses . . why fool with these obsolete methods of handling reels? DO IT THE MODERN, EFFICIENT WAY! Reel or unreel wire, cable, rope with

ROLL-A-REEL

Simple, strong, easily handled stand for your reels to save time and labor. Adjustable slots for wide variety of reel sizes.





Style A:
2,000 lbs. cap. 37.50
Style B:
4,000 lbs. cap. 75.00
F.O.B. Cincinnati

WRITE TODAY FOR DETAILS

ROLL-A-REEL
1100 SYCAMORE AT CENTRAL PARKWAY
CINCINNATI 2, OHIO

If you write maker identify as IEN - 1882

WILLIAMS-HAGER FLANGED *Silent* CHECK VALVES WILL ELIMINATE COSTLY, DANGEROUS WATER HAMMER IN YOUR PLANT

Get the Facts!
WRITE FOR YOUR COPY OF THIS NEW BULLETIN *TODAY!*

Don't let dangerous water hammer wreck the piping system in your plant. Learn the cause, effect and control of this costly nuisance.

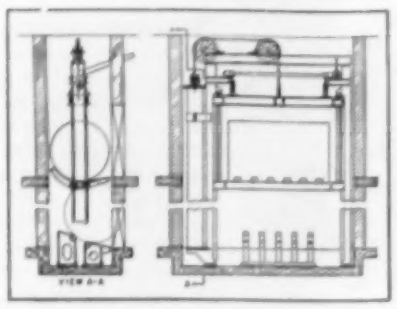
CHECK VALVES

THE WILLIAMS GAUGE CO., INC.
2900 Pennsylvania Avenue, Pittsburgh 33, Pa.

If you write maker identify as IEN - 1883

CONVEYING . . Platform assembly lowers cylindrical loads by gravity

Source: GIFFORD-WOOD COMPANY
3 Hudson Ave., Hudson, N. Y.



Built to order

Drums, barrels, rolls of cloth, rubber, paper, are rolled onto the cradle type carriage of this new Powerless Drop. The load overbalances a counterweight, mounted in a vertical cylinder, and the load and platform move downward. A valve controlled air escape port, at the top of the cylinder, is adjusted to regulate the speed of descent. At the bottom of the movement, uprights take over the weight of the load and cause it to roll away. As soon as the platform is unloaded the counterweight starts its return and the platform moves upward to receive the next load. An air escape port, at the bottom of the cylinder, controls the speed of this movement also.

If you write maker identify as IEN - 1884

BLOWER . . Centrifugal design for air conditioning and ventilating

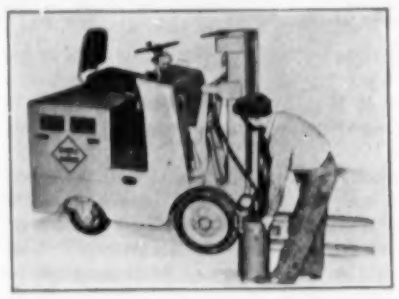
Source: CHICAGO BLOWER CORP.
9867-71 Pacific Ave., Franklin Park, Ill.

Bulletin A-101

Illustrated is the impeller in the company's new Type-A Airfoil line of centrifugal blowers. The blades are hollow section, backward curved, Airfoil design for quiet efficient operation. The blower is available in air capacities from 600 to 750,000 cfm. and for pressure from ⅛ to 32 inches. Impeller diameter is 12 to 123 inches. Drive arrangement, direction of rotation, discharge location, are subject to specification.

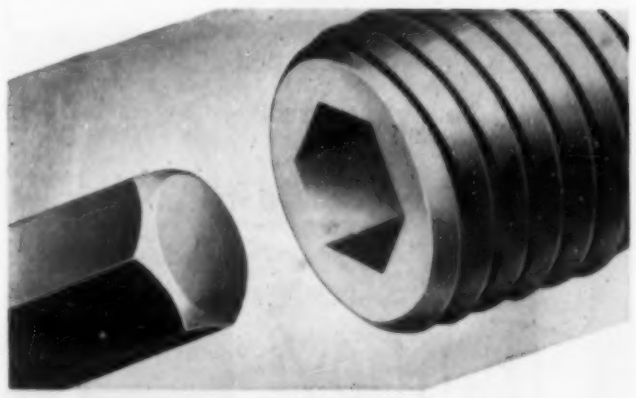
If you write maker identify as IEN - 1885

You can specify Lincoln Centro-Matic centralized lubrication on new trucks ordered from Elwell-Parker Electric Co., 4265 St. Clair Ave., Dept. IEN, Cleveland 3, Ohio. The grease lubricant applies from a Lincoln Bucket Pump connecting to an adapter nipple supplied on the truck or by a hand pump mounted permanently on the truck. Lines lead to all the major bearings. Pressure is to 2,500 pounds.



All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 1886



Bristol's hex socket screws assure quick, strong assembly

• Easier to apply in hard-to-get-at places, Bristol's hex socket cap screws spin readily into place, fit perfectly and wrench up tightly. Stronger holding, tamper-proof, they make production and maintenance easier. Get them from your industrial distributor. Sizes 0 wire to 1" in diameter. Write for free bulletins showing applications.

A.4.6

BRISTOL'S SOCKET SCREWS
Hex and Multiple-Spline Socket Screws, Cap and Set
THE BRISTOL COMPANY, Socket Screw Division, Waterbury 20, Conn.

If you write maker identify as IEN - 1887

FREE *Send for your copy today*

Helps you choose the RIGHT Hood Glove— *Neoprene, Rubber or Plastic* for ANY Industrial job

Check this Reliable, Handy Hood Performance Chart!

. . . this information-packed booklet shows comparative wear and chemical resistance of Hood Neoprene, Rubber and Plastic Coated Gloves, and contains illustrations and full descriptions of the complete line of Hood Industrial Gloves — top choice for *every* job in *any* industry.

HOOD RUBBER CO.
Watertown, Mass.

If you write maker identify as IEN - 1888

Here's free information to help you reduce material and assembly costs . . .

If you assemble metal, wood, plastics, fabrics or glass, here is a wealth of free information which shows how to increase efficiency and improve products with Townsend fasteners.

Special Cold Formed Fasteners and Small Parts explains the economy of cold-forming small parts and how to enjoy the advantages of Townsend's design service. Bulletin TL-89

Townsend Tapping Screws describes seven types of tapping screws used for economical, quick, secure fastening of sheet metal, casting, forgings, plastics, plywood and composition materials. Bulletin TL-88

Townsend Locknuts gives data on positive resistance to vibration and shock with Tufflok and Nylok locknuts which provide tight grip through use of special locking inserts. Bulletin TL-63

Cherry Blind Rivets shows how this ingenious rivet is used by one man, from one side of the work, to rivet "blind" in double-surfaced structures, box sections, tubes and ducts. Bulletin TL-76

TWINfast Wood Screws explains how the two threads and double thread pitch cut driving time, increase holding power in wood-to-wood, wood-to-plastics and metal-to-wood applications. Bulletin TL-67

Place Bolts describes this slotted-type, one-piece, all-metal, reusable bolt and how it offers cost savings in vibration fastening. Bulletin TL-73

Townsend Company
Established 1816
NEW BRIGHTON, PENNSYLVANIA

If you write maker identify as IEN - 1889

PHOTO EQUIPMENT... Geared to SCIENTIFIC and INDUSTRIAL Uses

FREE 55th Annual Catalog

96 Pages crammed with **Thousands** of Newest **Photo Tools, Cameras** (Press, Studio, Candid, Special Purpose, etc.), **Lenses, Projectors,** Lighting and Developing Equipment, Enlargers, etc. for Amateur - Professional in Scientific or Industrial work.

CAMERAS	Commercial — Recording — Identification — Special Purpose — Polaroid Land Back — Laboratory — Photomicrography — etc.
ENLARGERS	Reducers — Copying, etc.
LENSES	Largest stock from ⅜" to 72" — all speeds — Portrait — Commercial — Wide Angle — Tele-Lens — Coating, etc.
PRINTING EQUIP.	35 Mm. to 8x10 in. etc.
PROJECTORS	Demonstration and Instruction.
LABORATORY EQUIP.	Stainless Steel, Slide Equip., Dryers, etc.

Burke & James, Inc.
311 S. Wabash Ave., Chicago 4, Ill. U.S.A.

Fine Photographic Equipment For Over 55 Years

If you write maker identify as IEN - 1890

FLEXIBLE

METAL HOSE

For every industrial purpose wherever flexing, vibration, or movement is involved.

For pressures to 20,000 P.S.I. Temperatures to 2,000° F. — or for vacuum service or sub-freezing temperatures. Available as random length hose or as assembled units with fittings.

Made in — Seamless Bronze — 3/16" I.D. to 10" I.D.
Carbon Steel — 1/4" I.D. to 20" I.D.
Stainless Steel — 1/4" I.D. to 4" I.D.

WRITE US FOR CATALOG

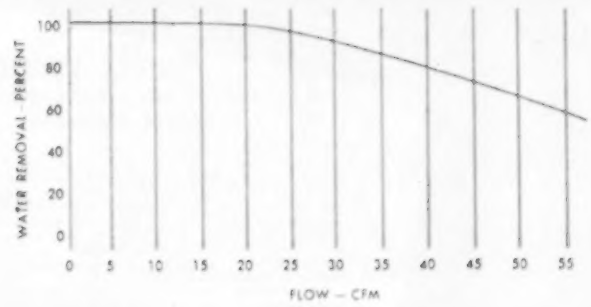
PACKLESS METAL HOSE Inc.

31-40 WINTHROP AVE. • NEW ROCHELLE, N. Y.

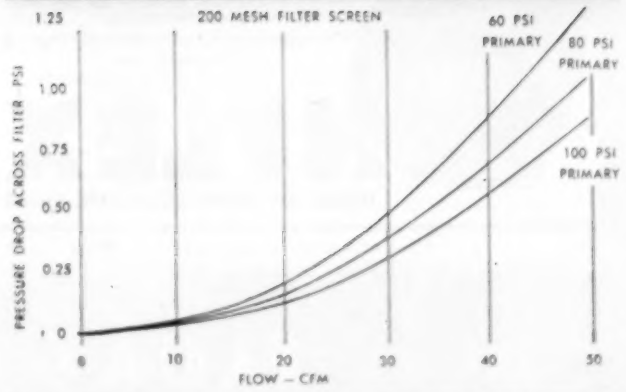
If you write maker identify as IEN - 1891

performance data prove
Norgren
Automatic-Drain Filter's

HIGH EFFICENCY IN MOISTURE REMOVAL



LOW PRESSURE DROP



New transparent replaceable bowl filter for ¾" and 1" air lines. Water capacity 1 pint.

Replaceable metal bowl filter for ¼", ⅜" and ½" air lines.

Permanent metal bowl filter types for ¼" to 1½" air ilnes.

New, small replaceable bowl filter for ¼" and ⅜" air lines. Screw type clamp ring.

PIONEER AND LEADER IN OIL-FOG LUBRICATION FOR 26 YEARS

Valves • Filters • Regulators • Lubricators • Hose Assemblies

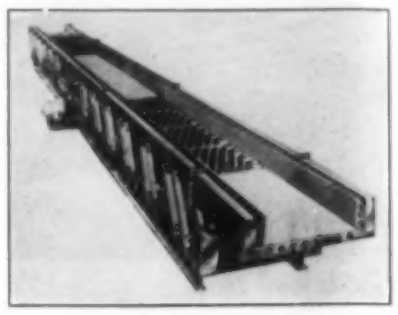
WRITE FOR NEW CATALOG No. 600

C. A. Norgren CO.
3432 So. Elati, Englewood, Colo.

If you write maker identify as IEN - 1893

CONVEYING . . Vibrating trough, dual design, to handle bulk materials

Source: SYNTRON COMPANY
410 Lexington Ave., Homer City, Pa.



Bulletin "Dual Trough"

Amplitude is a little over ¼ in. and frequency is about 1,000 excursions per min. for this new balanced Dual Trough vibrating conveyor. The two troughs, or screens, are mounted one above the other and are connected by leaf springs. The complete assembly is supported on guide links for connection to the eccentric drive located in the base.

Model 2-B has maximum capacity of 80 ton per hour. It is available in sections to 65 ft. in length with trough width at 20 in. and in sections to 30 ft. with a 40-in. width. Model 6-F has capacity to 280 ton per hour. It is available in sections up to 175 ft. in 20-in. width and to 100 ft. in 40-in. width. Both models can be specified with tubular troughs.

If you write maker identify as IEN - 1894

WELDING . . Bare bronze wire to overlay and weld bronze, cast iron

Source: AMPCO METAL INC.
1745 S. 38th St., Dept. IEN, Milwaukee 46, Wis.

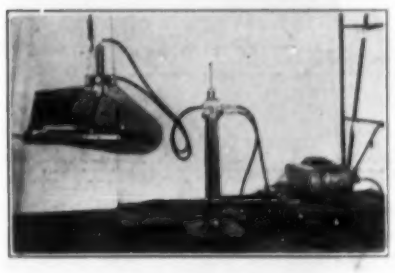
For deposit by inert arc

Phos-Trode is a new bare coiled wire of processed phosphor bronze. It is intended for overlay applications because of its good soft bearing alloy qualities. It also can be used to join brasses, tinned bronzes, cast iron, employing the inert gas process. Four diameters range from 0.045 to 0.064 inch. The wire is layer wound in 25-lb. standard packages.

If you write maker identify as IEN - 1895

SHEARING . . Mobile hydraulic machine for strip stock to 5/16 by 25 inches

Source: MANCO MFG. CO.
Grove & West, Bradley, Ill.



Valve controls action

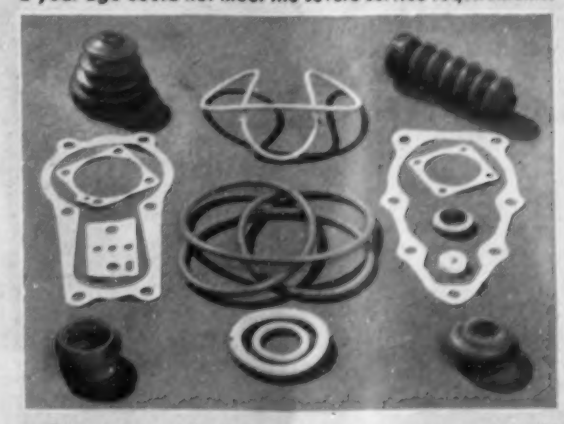
Hydraulic cylinder operntes the pivoted upper blade of this new mobile shear. It is powered by a motor driven hydraulic pump and is controlled by a lever operated valve. The valve can be mounted on a stand, as shown in the illustration, when it is specified in this arrangement. The shearing head weighs 600 lb. and is equipped with a hanger for suspension from overhead. The 2-hp. pump assembly weighs 350 pounds.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 1896

SILICONE
RUBBER MOLDED PARTS

With new compounds being developed almost weekly, Silicone rubber molded parts are performing faultlessly in many critical applications where Silicone of less than a year ago could not meet the severe service requirements.



Remaining resilient at extreme temperatures (—100° to +500°F) today's Silicone stocks have greatly increased tensile strength and far lower compression set. They withstand many oils and chemicals, resist prolonged weathering, fungus growth, oxidation and ozone, have excellent dielectric properties and water repellency. They bond well to metal, and are stainless and odorless.

Acushnet PROCESS COMPANY

Send for Acushnet Rubber Handbook, a comprehensive data reference.

Address Correspondence to 760 Belleville Ave., New Bedford, Mass.

If you write maker identify as IEN - 1897

MERRILL MATERIALS HANDLING DEVICES

3-44-2

MERRILL BROTHERS
56-14 ARNOLD AVENUE MASPETH, N. Y.

If you write maker identify as IEN - 1898

THE NEW RESPIRATOR
workers want to wear

. . . the M.S.A. GASFOE

For nuisance exposure to light concentrations of organic vapors and acid gases

★ Smart, modern design combats workers' resistance to respirator use.
★ So light, users hardly know they're wearing it.
★ Compact, streamlined design gives greater job vision, comfort.
★ Replaceable parts bring economy, longer service life.
★ Easily changed, factory-packed cartridges assure peak protection.

Because the M.S.A. Gasfoe gives workers what they want in respirator appearance and comfort, it's tops in acceptance value. Unusually light in weight, the Gasfoe makes light work of those jobs around obnoxious odors. It's good looking; compact. No distracting corners to block job vision. Proved filter action.

It's economical, too. All parts are independently replaceable. In seconds, any element, worn out after extended service, can be replaced —a good as new respirator goes back on the job. Write for details.

MINE SAFETY APPLIANCES CO.
Braddock, Thomas & Meade Sts.
Pittsburgh 8, Pa.
At Your Service: 68 Branch Offices in the United States

MSA SAFETY EQUIPMENT HEADQUARTERS

If you write maker identify as IEN - 1899

ANGLE STEEL STOOLS

RUGGED-Smooth, with ADJUSTABLE BACK REST TO FIT WORKER

•Years of designing and manufacturing experience stand back of Angle Steel's rugged industrial stools. Perfect rigidity is engineered into all varying models and designs. All stools have Angle Steel's riveted construction. Legs have ball-type feet for solid footing and easy sliding. Available in various heights. Finished in Olive Green, Angle Steel Gray or School Brown baked enamel. Choice of wood or steel seats. Wood seats and back rests in natural finish.

Helpful literature . . . FREE

ANGLE STEEL, Inc.
Dept. 3 Plainwell, Michigan

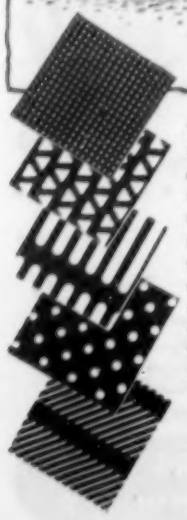
SEND FREE Literature . . . we're interested in: ....Benches ....Machine Tender Trucks ....Stools.

Company .....

My Name ..... Title .....

Address .....

If you write maker identify as IEN - 1900



H & K Perforated Holes

This mouse hole screens out "foreign" matter just as H & K perforated metal cleans and sizes hundreds of materials in processing and manufacturing. The mouse made its hole of the proper size. You can select from a wide range of sizes and shapes the perforations which will best serve your needs.

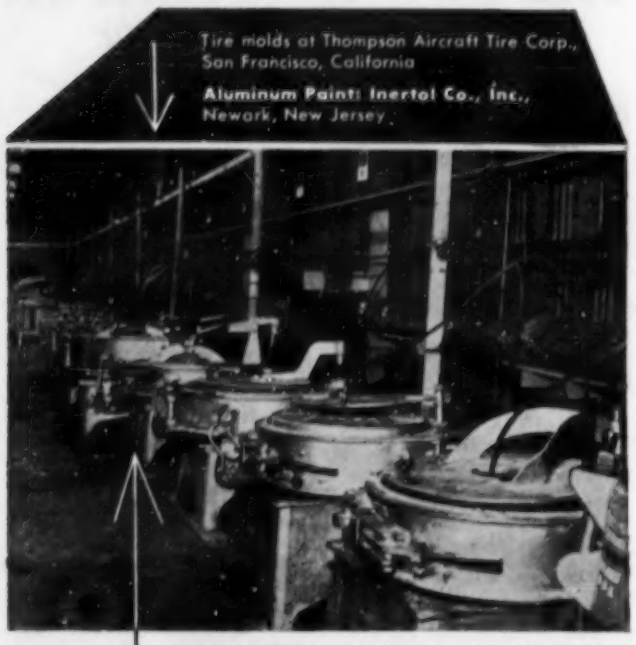
Our perforations are accurate to size, uniformly spaced and can be furnished in any metal you want, as well as in plywood, hardboard, plastic and other materials available in sheet, plate or coils.

We invite those requiring perforated material to ask for our catalog No. 62 and to remember that "If it can be perforated H & K can perforate it."

The Harrington & King Perforating Co.

5637 Fillmore Street, Chicago 44, Illinois
114 Liberty Street, New York 6, New York

If you write maker identify as IEN - 1901



ALUMINUM PAINT resists scuffing at 300°F

Designed to retread aircraft tires for the U. S. Army, Navy and commercial airlines, these molds operate 24 hours a day at 300°F. The paint *must* withstand this continuous baking temperature without scuffing, peeling, flaking or any way contaminating materials used in the retreading operation. Absolute cleanliness is essential. Inertol Interior High Heat Aluminum Paint No. 433 (ALCOA Pigments, of course) meets all of these requirements. No wonder it has been specified and used successfully for more than five years.

Special-formula, high heat aluminum paints have been developed jointly by ALCOA and leading manufacturers for use in "hot" industrial applications such as this. Paints made to these formulas last longer, cover better, stand up better under high temperatures, corrosive smoke and fumes.

ALCOA does not make paint. But ALCOA Aluminum Pigments are used in more aluminum paints than any other brand. Look for the ALCOA shield on the paint that you buy. It's your assurance of top quality and performance in aluminum paints—top protection for industrial installations. Write today for information.

ALCOA ALUMINUM

ALUMINUM COMPANY OF AMERICA

FREE BOOKLET tells how to paint with aluminum.

Aluminum Company of America, Paint Service Bureau
1787-B Alcoa Building, Pittsburgh 19, Pa.

Please send your free book, *Painting with Aluminum*. I plan to paint_____

Name_____

Company_____

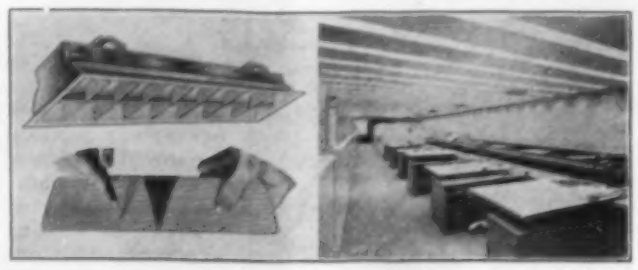
Address_____

City_____ Zone____ State____

If you write maker identify as IEN - 1903

LIGHTING . . Fluorescent fixture, louvers control lengthwise brightness

Source: DAY-BRITE LIGHTING INC.
16 N. 9th St., Dept. IEN, St. Louis 1, Mo.



Two lamp, 40 watt design

Para-Louver trade names a new light reflecting louver for cross-wise application in its Parabolic Troffer lighting fixture. It controls length-wise brightness so it is comparable with the brightness when viewed at 90 deg. with the side of the fixture. The assembly can be located in any position for user comfort.

If you write maker identify as IEN - 1904

ADHESIVE . . Rubber base cement for fibre board, floor covering, paper

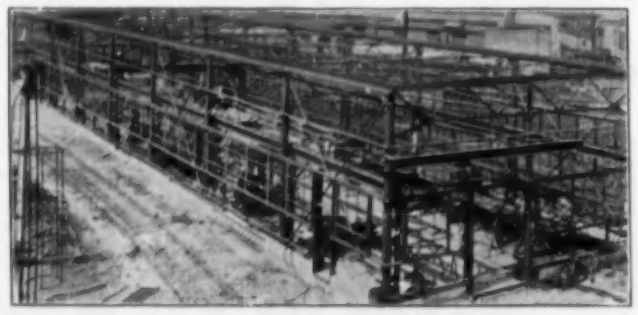
Source: FLINTKOTE COMPANY
30 Rockefeller Plaza, Dept. IEN, New York 20, N. Y.

In one, five and 55-gal. containers

Number 749 is a new non-flammable rubber cement to bond paper, paper board, cloth, insulating materials, asphalt saturated felts and composition floor coverings. The material is not affected by temperature changes. It is resistant to penetration by water and moisture vapor. It is applied by brush, spray, roller coater or spreader bar. It provides a bond with shear strength of 100 lb. per sq. in., or more, when employed to adhere V1 or V2 fiber board to itself.

If you write maker identify as IEN - 1905

Standard pipe, 1½ to 9 in., was used in the place of structural shapes for columns, trusses, joists and bracing in a hurry-



up job to construct a building 160 ft. in length by 38 ft. in width with 11-ft. clearance for a 5-ton overhead crane. Corrugated siding was used for wall construction. The roof was made of pre-fabricated steel decking. A 6-in. concrete slab forms the floor. The frame was erected in three weeks and another week saw completion of the roof and wall siding. L. B. Foster Co., P. O. Box 1647-A, Pittsburgh 30, Pa., can tell you about the building and can also design and build one for you.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 1906

If the equipment you design calls for 29.9" of vacuum or 25 psi pressure

Wings in this Leiman Pump take up their own wear, year after year, and always maintain contact with cylinder wall. *See our Listing in Sweet's Product Design File*

Write for 16-page catalog and blueprints of typical applications on Leiman rotary positive pumps—choice of industry since 1889.

LEIMAN BROS., INC.
166 Christie Street, Newark 5, N. J.

If you write maker identify as IEN - 1907

TORIT GIVES
Easy installation
Efficiency
Minimum piping
Low operating cost
Easy cleaning
Long service life
Small floor space
Adaptability
10 basic models

Here a Torit 19-FB Dust Collector and Torit Wheel Hoods effectively solve the dust problem for a large double-end polishing lathe. No lint or polishing dusts escape to endanger working conditions.

Up to 95% of the dusts spin into the pull-out drawer in the base of this Torit Dust Collector and the remainder is trapped in the after-filter bag.

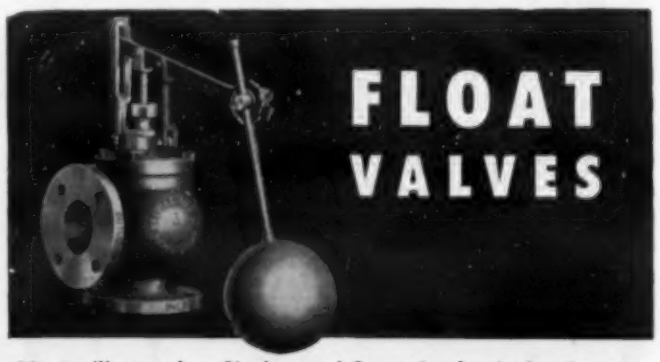
Torit Dust Collectors are turning in top performances in every type of industry. They will star for you. Write for information.

See our catalog in MACHINE TOOL CATALOGS

TORIT MANUFACTURING COMPANY
286 WALNUT STREET ST. PAUL 1, MINN.

If you write maker identify as IEN - 1908

If you write maker identify as IEN - 1909



No. 77 illustrated — Single seated float valve for dead end service. Internal pilot control. 250 lbs. max. inlet pressure. Does the job of more complicated control valves at a much lower cost wherever tight closing float valves are required for make-up water control. Sizes 2" — 8". Other types. Get BULLETIN 349.

Call Your Supply House or See Classified Phone Directories for Nearest KLIPFEL Agent.

Alabama Birmingham	Illinois Chicago	Missouri St. Louis Kansas City	Ohio Cincinnati Cleveland	Tennessee Memphis Nashville Knoxville
Arizona Phoenix	Indiana Evansville Indianapolis	Montana Billings	Oklahoma Tulsa	Utah Salt Lake City
California San Francisco Los Angeles	Louisiana New Orleans	New York Buffalo New York Syracuse	Oregon Portland	Washington Spokane Seattle
Colorado Denver	Massachusetts Boston	New Mexico Albuquerque	Pennsylvania Pittsburgh Philadelphia	Wisconsin Milwaukee
Florida Tampa	Michigan Detroit	North Carolina Greensboro	Texas Dallas	Canada Montreal
Georgia Atlanta	Minnesota Minneapolis			

K-139

Klipfel VALVES, INC. HAMILTON, OHIO

If you write maker identify as IEN - 1910

HIGH AND LOW TEMPERATURES

NEW BENCH-TYPE TEST UNIT

WEBBER

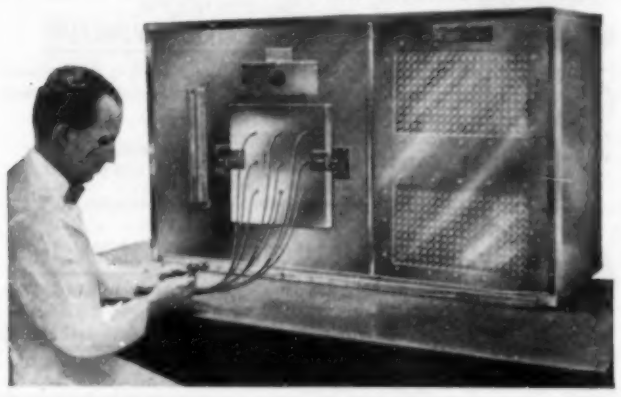
TRADE MARK REGISTERED

COMPLETE TEMPERATURE RANGE

TESTING UNITS

Combine high and low temperatures within the same cabinet with all controls self contained. Unit measures 50"x28"x20" with a testing chamber 12"x12"x12". Temperature range is from -80° F., to 185° F. Heat application is accomplished with reverse cycle refrigeration, which eliminates the hazards associated with open heating elements. A blower is provided for even distribution of temperatures and greater testing accuracy. Latch-type or hinge-type door optional. Accelerated pull-down to -80° in 30 minutes or less.

Write today for more complete information



INDUSTRIAL FREEZER DIVISION

WEBBER MANUFACTURING COMPANY, INC.

(Formerly Webber Appliance Co., Inc.)

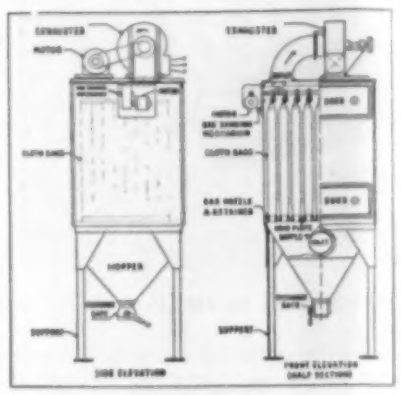
2746 MADISON AVENUE - INDIANAPOLIS 3, INDIANA

If you write maker identify as IEN - 1911

If you write maker identify as IEN - 1913

DUST COLLECTING . . Cloth screen assembly rates 200 to 1,000 sq. ft.

Source: PANGBORN CORPORATION
230 Pangborn Blvd., Dept. IEN, Hagerstown, Md.



Bulletin 916

Dust laden air is drawn in beneath the rectangular housing of this new Type-CN cloth bag collector. The air fills the upper portion of the dust hopper at the bottom. It is prevented from flowing directly into the bags by an inverted V-baffle to result in even distribution. Heavy particles settle out before the air turns upward. Fine particles collect on the inside surface of the bags. The air passes through to be exhausted at the blower.

The collector is particularly suited for use on finely divided dust such as carbon black, cork, fine wood, graphite, pigments, lime, fine tobacco and metal oxides.

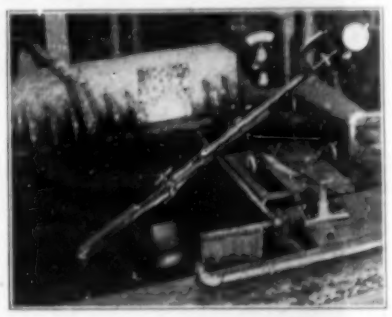
The bags are made of sateen weave cotton filter fabric stitched vertically to form multiple tubes. These are inserted into hinged nozzles and are sealed against grid plates by rubber gaskets sewed into the bottom hems. The bags are hooked to a shaker channel at the top. It connects to an eccentric arm operated by a gear and pinion from a fractional horsepower motor located outside the housing. The collector can be shut down from time to time and this motor operated to clear the bags into the hopper.

Seven sizes range from 200 to 1,000 sq. ft. of cloth area. Two housing sizes measure 44 by 55 and 92 inches. Height ranges from 102 to 150 in., not including the blower.

If you write maker identify as IEN - 1914

HEAT TREATING . . Dilatometer indicates transformation of austenite

Source: AJAX ELECTRIC CO.
930 Frankford Ave., Philadelphia 23, Pa.



Developed in Germany

Operation of this new instrument, to gage heat treating action, is based on the volume change which takes place in transformation of austenite in a steel sample. The change is indicated on a dial at one end of the instrument while the opposite end, holding the sample beneath the dial actuating plunger, is immersed in the heat treating bath. The instrument is suitable for determination of transformation time for austempering, for martempering time cycles available before transformation begins, for the severity of the quenching medium. It also serves as a control check on steels prior to processing.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 1915

If you write maker identify as IEN - 1916

TO THE INGENIOUS

Not familiar with this

NEW INDUSTRIAL TOOL

Free Sample of Fullergript Brush Strip

What problems can you solve by adapting Fullergript to your equipment?

This brush strip can be coiled or twisted into numerous shapes. It can be formed to give intermittent or continuous brushing action. It adapts to stationary or power driven applications. How it may help *you* is a matter of your own ingenuity — plus the services of the Fuller Brush Engineering Dept. Find out what Fullergript can do by sending for a sample strip. We will also send a booklet showing its versatility. Simply write today.

Lower cost finishing with quality control for laminated plastic panels . . . because Fullergript made possible a brushing action leading to economies in other processes.

INDUSTRIAL Fuller BRUSH CO. DIVISION

3583 MAIN STREET • HARTFORD 2, CONN.

Power driven brushes, Factory & Institutional cleaning tools, Waxes & Detergents

---

If you write maker identify as IEN - 1917

NEW!

Delpark Filters for Paint Spray Booth Water

Now—through the use of Delpark industrial filters and automatic skimming, paint spray booth operation is more efficient. Hand-skimming, necessary with former methods, is eliminated. Fouled water spray jets and eliminators no longer interrupt spray booth operation. Clean-up labor and spray booth maintenance are reduced to a minimum.

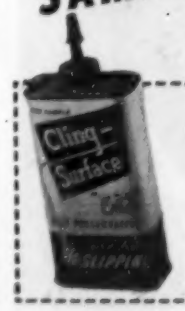
Write today for information on the Delpark Paint Spray Booth Filter now in use in many large automotive plants.

INDUSTRIAL FILTRATION COMPANY
95 INDUSTRIAL AVE. LEBANON, INDIANA

If you write maker identify as IEN - 1918

FREE SAMPLE

- Makes and keeps belts soft and pliable
- *Pliable* belt "clings" to "surface" of pulley
- Dissolves hard "glaze" that makes belts slip
- *Only* belt preservative that has met and passed U. S. Government Tests and Requirements
- Sold with money-back guarantee since 1896



Cling-Surface Company, Inc.
1044 Niagara Street • Buffalo, New York

Please send me FREE sample can of Cling-Surface "50" Belt Preservative

Name .....

Title .....

Company .....

City ..... State .....

If you write maker identify as IEN-1919

Your Best Buy in Burs!

S.S.WHITE BURS cut fast, clean and cool and give long-lasting economical service. Cutting edges are keen — and stay sharp. There's a full selection of sizes and shapes of chromed, and carbide burs for cutting brass, steel, wood, hard rubber, bone or any other material that can be bored or milled by sharp-edged hardened steel tools.

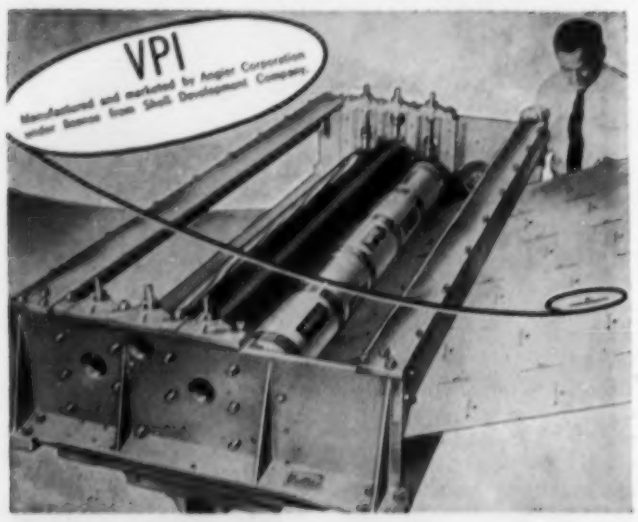
WRITE TODAY for 50-page Catalog T-51

It completely describes the full line of S.S. White flexible shaft tools and other industrial products.

THE S.S.White INDUSTRIAL DIVISION
DENTAL MFG. CO.
Dept. N, 10 East 40th St.
NEW YORK 16, N. Y.
WESTERN DISTRICT OFFICE: Times Building, Long Beach, Calif.

If you write maker identify as IEN-1920

Print Your Product as You Make It!



NEW GOTTSCHOPRINTER eliminates costly separate operation for printing all-over designs or repeated legends on any material processed in continuous web. Prints clean, sharp, permanent impressions on metal, rubber, linoleum, cloth, plastics, gasket material, paper, laminations, etc. up to 1" thick and 72" wide . . . *prior* to rewinding, slitting, sheeting, fabricating. Full details on request . . . but please state requirements.

Gottscho **ADOLPH GOTTSCHO, INC.** 50 Years of Leadership
Hillside 5, N. J.

If you write maker identify as IEN-1921

NEW MAINTENANCE EFFICIENCY with ERIEZ Magnetic "SWEEPERETTE"

10-DAY FREE TRIAL

Here is the self-contained magnetic cleaner, "Sweeperette"! It cleans tramp iron from plant floors, parking lots, warehouses, etc. with vacuum cleaner efficiency. No electric current. No wires. *Your first cost is the last cost.*

"Sweeperette" magnetic tube of powerful Alnico V, rolls with the wheels . . picks up nails, tacks, scrap iron on 360° of its surface up to a thickness of ¾"! Offset handle permits the unit to go under work benches, machinery, etc. The magnetic tube is easily removed from the frame and the tramp iron is quickly wiped off with neoprene wiper ring into collection pan which is part of the unit.

Tube then becomes a real MAGNETIC WAND! Can be used as a retriever magnet . . . as a small batch cleaner . . . as an underwater recover magnet! A dozen daily maintenance uses.

Buy "Sweeperette" direct from factory:

Model	Overall Width	Approx. Shpg. Weight	Price F.O.B. Erie, Pa.
S-8	10 3/16"	5 lbs.	$34.50
S-12	14 3/16"	6 lbs.	40.50
S-16	18 3/16"	7 lbs.	47.50
S-20	22 3/16"	7½ lbs.	55.00
S-24	26 3/16"	8 lbs.	61.50
S-32	34 3/16"	9½ lbs.	70.00

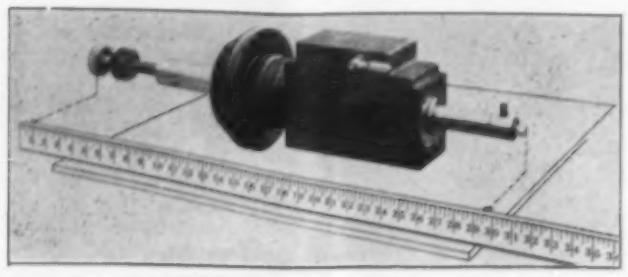
Or write for brochure giving full information. Free 10-day trial. Satisfaction guaranteed or money back.

ERIEZ ERIEZ
MANUFACTURING COMPANY
818 Magnet Drive, Erie, Pa.

If you write maker identify as IEN-1922

BORING . . Hydraulic feed head to mount on machine table or fixture

Source: HYDRO-BORER COMPANY
1603 E. Olympic Blvd., Los Angeles 21, Calif.



Special assemblies as specified

The spindle in this new boring head is rotated by belt connection to a motor supplied by the user. It is fed forward at 0.004 or 0.002 in. per revolution by a helically grooved piston inside a hydraulic cylinder to transfer oil from one face to the other during rotation. This action sets up feed pressure to about 600 lb. per square inch.

The rotating assembly and its cylinder can be rotated eccentrically in the head for variation in bore diameter to 0.014 in. in 0.001-in. increments without having to reset the tool. Bore diameter range is ⅝ to 6½ inches. Feed length is 6 inches. The assembly measures about 30 in. in overall length by 5 in. in width by 7 in. in height. The main housing is 9¼ by 3¾ inches. Weight is 70 pounds. List price is about $600.

If you write maker identify as IEN-1923

MIXING . . Motor driven impeller mounts on open or closed process tank

Source: EPWORTH MFG. CO.
6589 Epworth Blvd., Dept. IEN, Detroit 10, Mich.

Bulletin, "Unitized"

Emco Unitized is a new assembly of motor, geared reduction head, flexible coupling, shaft and an impeller or paddle blade in a welded steel housing. The housing rides a pair of angle irons on an open top tank. It can be supplied also with a flange and stuffing box to assemble on a closed tank. It can be moved from one tank to another, particularly in open tank assemblies. It is available with 1 to 20-hp. rating for impeller rotation at 29 to 176 rpm. subject to specification.

If you write maker identify as IEN-1924

Geon vinyl plastic stopped the corrosive action of a phosphoric acid solution operating at 150 deg. F. to protect the heat sensitive bulb on a Partlow temperature controller. The plastic material can be put on in a protective film thin enough for good thermal conductivity. It has been in operation on the controller bulb for about a year with no sign of deterioration. B. F. Goodrich Chemical Co., 324 Rose Building, Dept. IEN, Cleveland 15, Ohio, will give you details.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN-1925

Colonial Develops SPECIAL RUBBERS

FOR Tough INDUSTRIAL APPLICATIONS

CONSULT OUR ENGINEERS ON YOUR RUBBER PARTS PROBLEMS AT NO OBLIGATION

The Colonial Rubber Company has the experience, the technical staff, and the facilities to meet your *special* requirements in industrial rubber parts. Our service is fast, efficient and precise for three important reasons:

Colonial Operates Its Own
- **RUBBER RESEARCH LABORATORIES**
- **DIE-MAKING MACHINE SHOP**
- **PARTS PRODUCTION PLANT**

Send for Free Illustrated Booklet
Contains complete details on Colonial's custom rubber compounding and molding . . . shows *why* manufacturers can use this service to advantage.

2300

Colonial Rubber Co.
Ravenna, Ohio

If you write maker identify as IEN-1926

STICHT TACHOMETERS

FOR EVERY NEED . . . EVERY SPEED

ACCURATE · DEPENDABLE · QUALITY BUILT

CENTRIFUGAL HAND TACHOMETERS

Universal Type U with 5 ranges in one instrument.
CAT. NO. 303, 30-12,000 RPM
CAT. NO. 314, 45-18,000 RPM
CAT. NO. 322, 60-24,000 RPM
CAT. NO. 346, 120-48,000 RPM
Many other models with one, three or five ranges.
BULLETIN NO. 750

CHRONOMETRIC HAND TACHOMETERS

"Jaquet" Speed Indicators with built-in chronometer movement. Timing period 3 or 6 seconds. Guaranteed accuracy 1/2 of 1 per cent.
CAT. NO. 2301, 0-10,000 RPM
CAT. NO. 2302, 0-1,000 RPM
CAT. NO. 2304, 0-100 RPM
Suitable double rated speed.
Nine models. Various accessories.
BULLETIN NO. 735

CENTRIFUGAL STATIONARY TACHOMETERS

For permanent mounting on machines. Model J. Sizes 3 in., 4 in., 5½ in., 8 in. and 10 in. dial diameters. Flexible cable driven. Many standard ranges reading RPM, FPM, YPM, etc.
BULLETINS NOS. 794, 795, 796

HERMAN H. STICHT CO., INC. 27 PARK PLACE, NEW YORK 7, N. Y.
Tachometer Headquarters

If you write maker identify as IEN-1927

If IBH* fits your plant

BIG JOE®

Solves Your Problems!

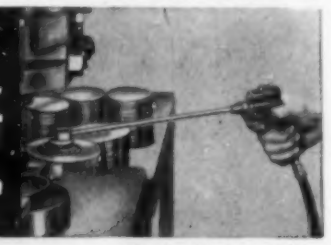
"IN-BETWEEN HANDLING"
Short distance hydraulic manipulation of materials too heavy for manual handling yet not requiring high priced power-driven equipment.

You can build a *fleet* of "BIG JOE" hydraulic lift trucks for the price of one power-driven unit . . . at the same time get equivalent lifting and stacking performance, guarantee of quality, selection from 40 specially "IBH-designed" "BIG JOE" 6 and 12 volt models with choice of lever, push-button or throttle controls. Write for booklet on "IBH*".

"HYDRAULIC HANDLING FOR EVERY DEPARTMENT"
BIG JOE MANUFACTURING COMPANY
900-02 Jackson Blvd., Chicago 7, Illinois
©1954 Big Joe Mfg. Co.

If you write maker identify as IEN-1928

FINGERS *must be saved*- KEEP THEM OUT OF PRESSES *with* LITTELL Pres-Vac SAFETY FEEDERS



30 Pres-Vacs cost less than the average cost of only one press accident.

Operated by Compressed Air

- Blanks are fed from a distance of 14 inches
- Eliminates need of putting fingers under press ram

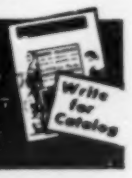
▸ ***BOOST PRODUCTION 20% TO 100%***
— *Reported by users*

▸ ***ELIMINATE DIE BREAKAGE***
— *Assures Feeding Blanks One at a Time*

▸ ***CUT INSURANCE COSTS***
— *Fewer Accidents Mean Lower Premiums.*

Littell Pres-Vac Safety Feeders are made in Single and Multiple types in a variety of cup sizes and styles.

F. J. Littell MACHINE CO.
AIR DIVISION
4133 RAVENSWOOD AVE., CHICAGO 13, ILL.
— District Offices: Detroit and Cleveland —



If you write maker identify as IEN-1929

Safer!

No Slippage with a NEWCO Wire Rope Clamp!

Holding Efficiency 95% to 100% of Catalog List: Simple to Install

It's safe! It's strong! The Newco Wire Rope Clamp and Thimble bearing surface is five to ten times greater than a pressed steel thimble. Eye opening larger than that of standard thimble. Users report greater holding efficiency than "U" bolt type clips. Reduces down time. Maximum protection to wire rope. Simple to install, no special tools needed. *Lasts up to three times longer!* Used by leading companies throughout the nation. Names on request. Compare the Newco Wire Rope Clamp with any other on the market . . . and you'll choose Newco.

Here's the Secret!

Locking construction, patented by Newman, automatically *forces clamp to hold tighter when load gets heavier.* IMPOSSIBLE TO SHEAR BOLTS OFF, because wire rope pressure pushes keying sections closer, preventing movement of bolts up and down.

Get all the facts . . . specifications, details, prices . . . on the Newco Clamp now. See your Distributor or write direct.

wire rope NEWCO CLAMP

Newman Manufacturing & Sales Company
Dept. 101, 205 Westport Rd., Kansas City 11, Mo.

If you write maker identify as IEN-1930

For Quickest Pipe Threading by hand...it's "OOR"

RIDGID

Popular Extra-Handy OOR Threads 1/8" to 1" Pipe Fast and Easily

- You just can't beat these small drop head dies for quick easy pipe or conduit threading.
- Snap the size head you want into the drive ring, from either side, and you're ready to cut clean perfect threads . . . heads can't fall out.
- Precision-cut alloy dies reverse easily for close-to-wall threads—no special dies needed.
- OOR and OR 1/8" to 1"; 111R and 11R, 1/8" to 1¼"; 12R, 1/8" to 2". Free carrier with sets. Every threader fully work tested before shipment. Buy them at your Supply House.

THE RIDGE TOOL COMPANY • ELYRIA, OHIO

RIDGID
Work-Saver Pipe Tools

If you write maker identify as IEN-1932

DRIVE . . Electronic variable speed employs dc. motor and three phase input

Source: RELIANCE ELECTRIC & ENGINEERING CO.
1088 Ivanhoe Road, Dept. IEN, Cleveland 10, Ohio

Stepless adjustment

Xatron V-S Drive is a new assembly including an operator's control station, a dc. drive motor and the control assembly shown in the illustration. The control cabinet measures about 57 by 28 by 66 inches. The equipment is available for 30, 40 and 50-hp. drives in several speed ranges, minimum at 105 rpm., maximum at 2,300 rpm. The exact range is determined by the drive size and the specified characteristics.

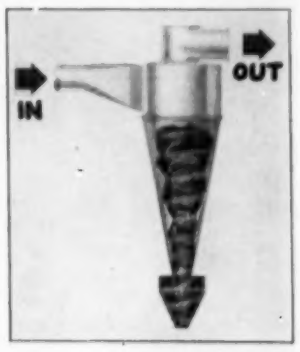
The control unit includes six single-anode air cooled mercury tubes trade named Xatron. They operate from the three-phase power supply with a full-wave bridge to give six-peak dc. output. The tubes are grid controlled by an electronic phase shifting circuit. They are assembled on a base which also serves as an air pressure chamber for a motor driven blower that supplies filtered cooling air. They are pre-wired, interconnected back to back, three on a side, and are arranged in individual L-shaped panels located over the air chamber.

Four optional features include quick smooth stopping by means of a dynamic braking circuit, fast smooth reversing by a magnetic control in the drive motor circuit, jogging, inching, creeping. A multi-motor drive arrangement applies power to two or more points in a machine or operates separate sections of a machine tied together for a single process.

If you write maker identify as IEN-1933

DUST COLLECTING . . Centrifugal unit for nuisance dusts and for recovery

Source: A. W. BANISTER COMPANY
23 Charles St., Dept. IEN, Cambridge 41, Mass.



Ask for Catalog

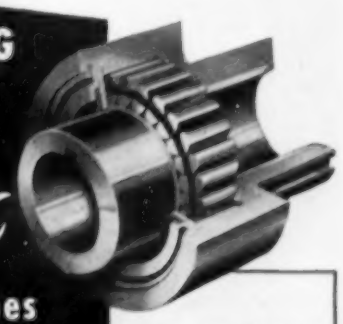
Dust laden air enters tangentially into the cylindrical chamber near the top of this new Dustmaster. The air and dust spiral downward, the dust passing into a collection chamber at the bottom. The air returns upward, in an inner spiral, to issue through the connection at the top.

The equipment is available in 18 to 84-in. body diameter in single, duplex, quadruple and two-stage assemblies for operation under either suction or pressure. It will collect and separate dry industrial dusts when the gas temperature does not exceed 800 deg. F. and when the shape and weight of dust particles make the mechanical separation practical. It will remove nuisance, toxic and hazardous dusts from an air stream. It will recover valuable dusts for salvage.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN-1934

FORMSPRAG CLUTCHES Are *Full Complement* Clutches



OVER-RUNNING
INDEXING (Feeding)
BACKSTOPPING

A FULL COMPLEMENT OF SPRAGS—between two races—provides an infinite number of gripping positions. This, along with Formsprag's internal simplicity, means: INSTANTANEOUS, ACCURATE OPERATION with no *backlash* . . . LONG LIFE because of changing contact points . . . MAXIMUM TORQUE CAPACITY for size and weight.

Before you specify another clutch, be sure to read this 10-page folder of technical engineering data. Just write to Formsprag — on your letterhead, please.

FORMSPRAG Company

23591 HOOVER ROAD
VAN DYKE, MICHIGAN

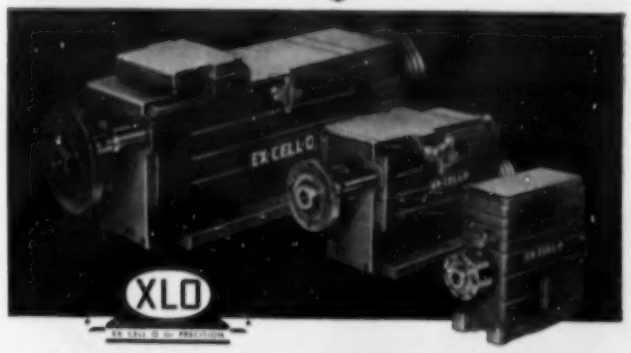
If you write maker identify as IEN-1935

EX-CELL-O HYDRAULIC POWER UNITS

For Special Purpose Machines

Ex-Cell-O Quill-Type Hydraulic Power Units provide a compact, flexible source of power for feeding, rotating and retracting cutting tools. They are especially suitable for automatic drilling, reaming counterboring operations. Three standard units are available—styles 28-A, 21 and 20, shown below. For full information send for Bulletin 45828.

53-9



EX-CELL-O CORPORATION
DETROIT 32, MICHIGAN

If you write maker identify as IEN-1936

NEW WAY TO LOWER SLING COSTS

Let us send you this new bulletin on ROEBLING ALL-PURPOSE SLINGS with the Tapered Sleeve Splice

YOU SAVE every way with these slings: 1) they cost less, are ready for the job; 2) they're flexible, easy to handle, tough, long lasting, develop the full catalog strength of the rope. And now you can get All-Purpose Slings with a heavy steel galvanized thimble, plus attached weldless hooks, links or shackles, if desired. They're available with loops in standard lengths and sizes; stocked by Roebling distributors and branches...Order All-Purpose Slings with the Tapered Sleeve Splice for lower sling costs; and send for new descriptive bulletin. John A. Roebling's Sons Corporation, Trenton 2, N. J.

Subsidiary of The Colorado Fuel and Iron Corporation CF&I

ROEBLING

If you write maker identify as IEN-1937

ULTRA-CHEX GAGE BLOCKS *for Every Need!*

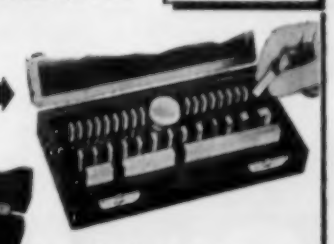
Supplied in one Superior Accuracy

5 MILLIONTHS ± ACCURACY

9 Block Set $22.50
OPTICAL PARALLEL $5.00

Quick Delivery on Small Standard Sets

34 Block Set $125.00
INCLUDING OPTICAL PARALLEL



82 Block Set $275.00 Complete

This Set will supply the needs of any discriminating shop that must work to gage-block precision.

All Sets at "Money Saving Prices" due to Mass Production Methods.

WRITE FOR FULLY ILLUSTRATED CATALOG

Dealers: Here's a real profitable line!

GEORGE SCHERR CO., INC.
COMPLETE LINE OF PRECISION INSTRUMENTS
200-EN LAFAYETTE ST. • N.Y. 12, N.Y.

If you write maker identify as IEN-1938

Get the most "coverage" for your money

GOLD SEAL PLASTIC Electrical Tape

Now . . . Gold Seal time-proved quality in *Plastic* Tape. Neat, thin wrapping gives all needed insulation on most jobs. Sticks fast — gives lasting protection — resists sunlight, water, oil solvents. Try it. Free sample on request. Jenkins Bros., Rubber Div., 100 Park Ave., New York 17.

JENKINS

Gold Seal Tape

FRICTION • RUBBER • PLASTIC

Single rolls, cellophane protected, and 10-roll Handy Pack cartons. Also Diamond Seal Friction and Rubber Tapes made to ASTM Specifications.

If you write maker identify as IEN-1939

keep costs down

with accurate job time records

CALCULAGRAPH

FIGURES ELAPSED TIME ACCURATELY

PRINTS DATE
STARTING TIME
FINISHING TIME
TOTAL ELAPSED TIME

Keep production costs in line with automatically computed, precision Calculagraph job time records. Just stamp card at beginning and ending of the operation. Calculagraph prints date, starting and finishing time plus precision calculated elapsed time. One Calculagraph can record and compute job time data for one entire shop or department by handling any number of cards in any sequence. Accurate, printed Calculagraph records can be filed for future use in estimating on new orders and checking production efficiency. Calculagraphs are low in cost, practically maintenance-free and built for a lifetime of dependable service.

COUPON BRINGS FULL INFORMATION — FILL IN AND MAIL TODAY!

CALCULAGRAPH COMPANY
SUSSEX STREET, HARRISON, NEW JERSEY

300

Send complete data on Calculagraph to:

NAME _____ TITLE _____
COMPANY _____
STREET _____
CITY _____ STATE _____

If you write maker identify as IEN-1941

SAWING . . Band saw machine, 16 in. throat, 50 to 4,500 fpm.

Source: WALKER TURNER DIVISION
639 South Ave., Dept. IEN, Plainfield, N. J.

Cuts many materials

Variable speed drive characterizes this new 16-in. band sawing machine to provide a range of speeds with which the machine can cut ferrous or non-ferrous metals, plastics, wood, composition materials. The drive includes a variable pitch sheave, operated by a hand wheel, and a reduction gearing that is set by a lever for either a high or a low range. The low range provides band speeds of 50 to 450 fpm. The high range is between 500 and 4,500 fpm.

Capacity under the guide is 8 inches. The table tilts 45 deg. to the right and 5 deg. to the left. The recommended motor rates ¾ hp. and operates at 1,140 rpm. Provision is made to mount the motor in a spring support in the base. Construction includes Carter quick change rubber tires on the band wheels.

If you write maker identify as IEN-1942

WRENCH . . Heavy duty, open end, ⅞ to 1½ in., takes tubular handle

Source: SNAP-ON TOOLS CORP.
8028 28th Ave., Dept. IEN, Kenosha, Wis.

Tightening a tool

Ten sizes have heads set at 15 deg. with the handle shank in a new series of heavy duty open end wrenches. The shank is fitted with a spring mounted locking button. This button rides into a hole in the tubular handle to lock on the handle until the button is intentionally depressed. Three handle lengths apply with the ten wrench sizes.

If you write maker identify as IEN-1943

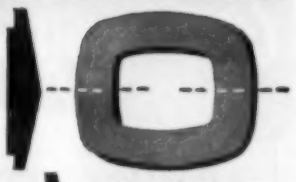
The Mult-A-Frame, previously described IEN-7165-52 for Ainsworth Mfg. Corp., 1471 E. Atwater St., Dept. IEN, Detroit 7, Mich., is reaching out into a new field where it serves to install electrical equipment. It is fabricated on the job employing its standardized channel and fittings. It is shown in the illustration as the support for continuous runs of fluorescent lighting and electric duct. Arrows in the picture show it.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN-1944

Ask us to explain why *ENGINEERED* SPONGE GASKETS are different!

For example take this gasket. Instead of punching it out in one piece, with the center material wasted . . .



we die cut it in sections, saving over half the material, then permanently weld the sections into a single piece.

Many another gasket problem has been engineered by us into a better product at surprisingly lower cost. Specialists in chemically blown sponge, PVC sponge, silicon sponge, foam rubber, neoprene and cork gaskets, we invite your inquiry for any gasket need.

J. M. CRANZ CO. INC.
2671 MAIN ST. BUFFALO 14, N. Y.
ENGINEERED MOULDED RUBBER PRODUCTS

If you write maker identify as IEN-1945

Save! WITH **STACKPOLE WELDING PASTE**

TORCH DRIES WITHOUT BLISTERING OR SPALLING

Here is the ideal back-up or dam material for welding complicated shapes. Holds plates and rods in place while welding—saves time in positioning odd-shaped pieces—protects threaded holes or other parts near the welded spot.

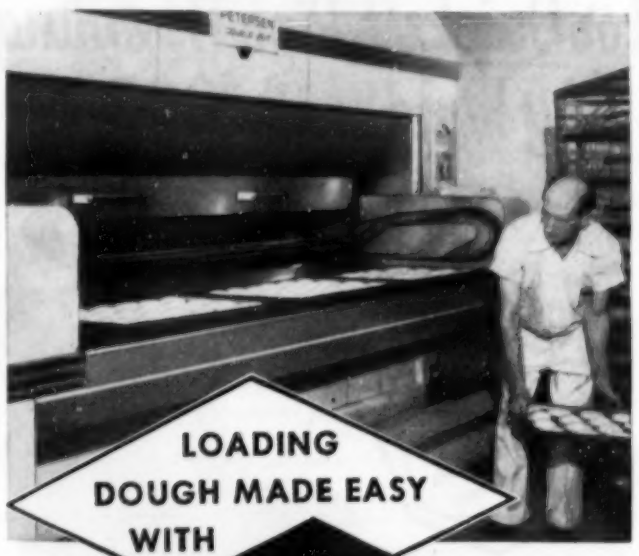
Stackpole Welding Paste sets quickly and surely with either an arc or gas flame. Does not blister, spall or crack and has a low rate of oxidation. Comes in 1, 2½ and 5 pound cans.

STACKPOLE CARBON CO., *St. Marys, Pa.*

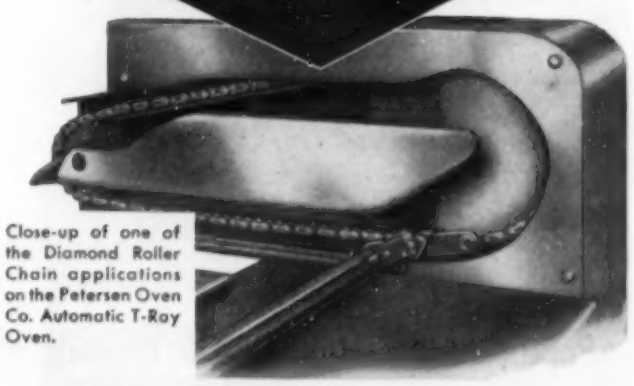
STACKPOLE

WELDING ELECTRODES • WELDING PLATES AND RODS
BRAZING CARBONS • RESISTANCE WELDING TIPS
BRAZING BOATS AND TRAYS . . Write for Catalog 18

If you write maker identify as IEN-1946



LOADING DOUGH MADE EASY WITH DIAMOND ROLLER CHAINS



Close-up of one of the Diamond Roller Chain applications on the Petersen Oven Co. Automatic T-Ray Oven.

Moving bread trays automatically into Petersen ovens is easily accomplished by a bar connected at either end to a Diamond Roller Chain Drive which in turn is driven from below by Diamond Chains.

As the trays are placed on the platform, the bar travels around and moves them into the oven for baking. The bar then rides up and over in a period cycle to allow for placing the next set of trays carrying the dough.

Here again the uniform quality and long-lasting reliability of Diamond Chains fulfill the machinery-makers needs and assure the steady output desired.

You may not make bake ovens but there is good reason to know that Diamond Roller Chains can improve the machinery you make or use.

DIAMOND CHAIN COMPANY Inc.
Dept. 465, 402 Kentucky Avenue, Indianapolis 7, Indiana
Offices and Distributors in All Principal Cities.

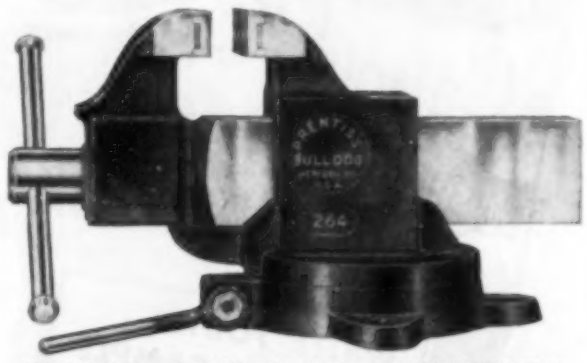
DIAMOND ROLLER CHAINS

If you write maker identify as IEN - 1948

PRENTISS

"BULL DOG" VISES

Backed by 86 years of time-proven acceptance by industry.



MACHINISTS — TOP SWIVEL JAW — COMBINATION PIPE
HINGE PIPE — WOODCUTTERS — UTILITY

Renewable steel jaws that cannot work loose, swivel base with a positive lock plus other features that give you vises that will stand the most severe tests. Send for THE NEW PRENTISS CATALOGUE TODAY.

Your Industrial Distributor can supply you

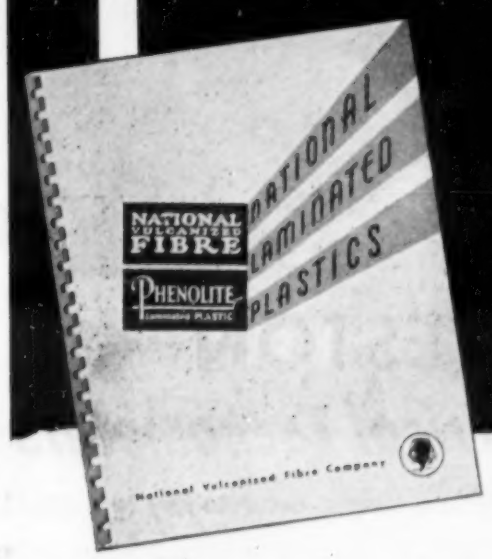
PRENTISS VISE DIVISION
OF THE CHARLES PARKER CO., MERIDEN, CONN., U. S. A.

If you write maker identify as IEN - 1949

want

NEW IDEAS

for a better product?



. . . then start with National Laminated Plastics—materials of a million uses.

Your first step is to get this free, fact-filled catalog—48 pages of informative, idea-provoking data that you'll refer to time after time.

This catalog gives you all the information you need on forms and grades of vulcanized fibre and Phenolite laminated plastic—weights, tolerances, etc. It tells what you want to know about electrical and mechanical properties, suggested applications, and machining techniques. It lists these properties for each of the many grades available.

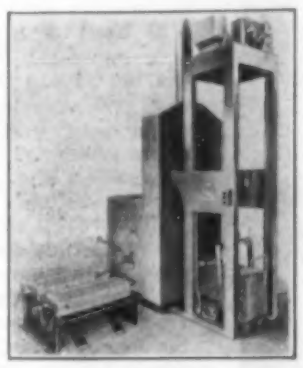
Write to Dept. G-2 for your personal copy of this valuable catalog. It's yours for the asking.

NATIONAL
VULCANIZED FIBRE CO.
WILMINGTON 99, DELAWARE
FIRST—IN MAKING THE MOST OF LAMINATED PLASTICS

If you write maker identify as IEN - 1951

MELTING . . Elevator attachment to charge company's soft metal furnace

Source: NOLAN CORPORATION
2333 E. Dominick St., Rome, N. Y.



Minimizes labor

Meltevator is a new motor operated elevating hoist attachment to apply with the company's melting furnace for type metal, lead, babbitt, previously described IEN-3222-49. Complete equipment includes a bottom pouring spout on the furnace, a loading cover, power agitator, hand pump, water cooled ingot molds, in addition to the elevator. The furnace can be heated by electricity, oil or gas. Standard temperature is to 850 deg. F. but can be increased to 1,000 deg. F.

The standard unit is available with pot capacity from 600 lb. to 5 ton. The furnace design can be square, rectangular or round. Automatic temperature control and pre-heat time switches are available as optional units.

Trucks containing metal are rolled between the uprights of the elevator where bosses on the sides of the special truck are engaged by the hoisting mechanism. Upon pressing a button, the truck is elevated and the load dumped through a counter balanced door operated by the weight of the falling metal. The door closes when charging has been completed to prevent escape of smoke and fumes. The truck is returned to the floor upon pressing a "down" button.

If you write maker identify as IEN - 1952

PUMP . . Screw type rotary for positive coolant delivery

Source: ASSOCIATED ENGINEERS INC.
P. O. Box A-1628, Springfield 1, Mass.

PressureKool design

Rotating screw in this new coolant pump is made of hardened steel. It operates in a Hycar synthetic rubber sleeve or cylinder to draw in coolant at the driving motor end and deliver it at the outboard end. Port sizes range from ½ to 1½ inches. A shaft seal, between the motor and the pump, prevents leakage. The motor is mounted on ball bearings.

The pump is available in horizontal and vertical assemblies in four ratings of 6 to 25 gpm. on free delivery at 1,725 rpm. Delivery rating, at 60 lb. pressure, is about 3 to 9 gpm. In addition to the motor driven units, the pump is available with a foot bracket mounting for connection to a drive supplied by the user.

Any liquid coolant can be handled and the pump is capable of delivering coolants containing abrasives in suspension. Motor rating is ¼ to 1 hp. in the regular line. Larger sizes, with rotor and stator combinations for given applications, employ 1½ and 2-hp. motors.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 80

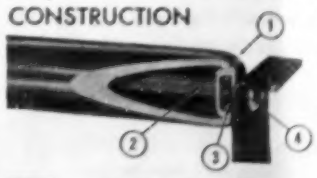
If you write maker identify as IEN - 1953

A PAID NEWS ADVERTISEMENT BY RAPIDS-STANDARD CO.

NEW RAPISTAN ROLLER CONVEYOR for continuous service capacities to 2700 lbs.

For flow handling of bulky packages, heavy materials and impact loads, this new Rapistan 1.9 Series Rapid-Roller* Gravity Conveyor features unusually rugged construction. Rolled down ends of the 9 gauge steel rollers (1) make for easier removal of packages from conveyor. Hexagonal axles (2) turn freely on extra-large ball bearings (3), cannot slip out of place. Channel frame (4) is of 10 gauge steel for rigidity and strength to absorb continuous heavy punishment. The new Rapid-Roller is particularly suited to flow handling of chimed cans, barrels, steel drums, pallet loads, wide stock, appliances or any article with one firm, free-running surface. Available in every standard width from 12 to 51 inches in section lengths of 5 and 10 feet, both straight and curved. For full information, specifications and prices, write direct to:

CONSTRUCTION



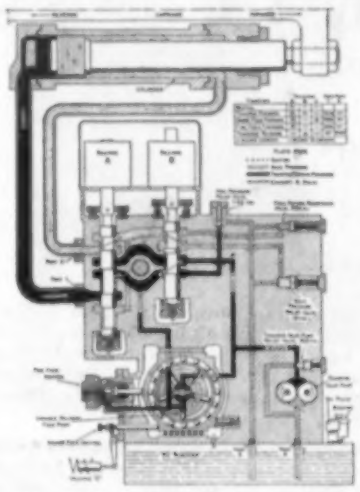
*T.M.

The RAPIDS-STANDARD CO., Inc.
227 Rapistan Building
Grand Rapids 2, Michigan

Rapistan® BETTER CONVEYING EQUIPMENT

If you write maker identify as IEN - 1954

ANY-FEED Oilgear Power Unit



For machine tool and other straight-line feeds

An amazing little fluid power feed pump for practically any machine tool or straight-line feed installation you can think of. It embodies the *Any-Feed* Oilgear Fluid Power unit with a 20:1 range and rapid traverse as high as 265:1 over feed rate. It provides undeviating precision day in and day out once the feed rate is set.

It installs *into* your assembly easily, or mounts nearby or remotely. Yet control of the many possible functions is found in the electric pushbutton station; or partial or completely automatic operation is available. It affords complete operating safety for all action is instantly neutralized in case of accident. All parts are completely and easily accessible. The design is simple; you mount, connect two pipes and control wires. Write for descriptive Bulletin 44200 now while you think of it. THE OILGEAR COMPANY, 1567 West Pierce Street, Milwaukee 4, Wisconsin.

If you write maker identify as IEN - 1955

996-5

The extra care, metallurgy and precision in each I-R tool and accessory does make a difference. Write for new Bulletin 4126.

Ingersoll-Rand
11 Broadway, New York 4, N. Y.

ROCK DRILLS • AIR TOOLS • DIESEL AND GAS ENGINES
COMPRESSORS • CENTRIFUGAL PUMPS • VACUUM EQUIPMENT

If you write maker identify as IEN - 1956

Lightweight-Economical

IT'S THE REVOLVATOR® UPLIFTER ELEVATOR

Adaptable for shop use or warehouse handling and ideal for shipping and receiving—the new electric Uplifter is the real buy today in materials handling. In two capacities, 1000 - 2000 pounds, platform sizes 24 x 24 and 30 x 30, lifts of 62 and 65 inches on standard models—the Revolvator Uplifter can be had powered by a variety of electric circuits ranging from an automobile battery to 220 volt currents.

Priced under all competition, the Uplifter includes all the safety and convenience features that have made Revolvator portable elevators a standard in industry. Get full information today on this new, easy operating inexpensive portable elevator. Remember, too—we build Revolvator Portable elevators to your particular needs.

Write or phone

REVOLVATOR CO.
8700 TONNELLE AVENUE, NORTH BERGEN, N. J. • UNion 3-8120

If you write maker identify as IEN-1957

Bulletin Now Ready

on new Fenwal Miniature THERMOSWITCH® Controls

No charge . . . just write

If your product or project calls for temperature control that is exact and reliable but space saving is an important consideration, you will want to know more about the new Fenwal Miniature THERMOSWITCH unit. It incorporates in a small temperature control many characteristics previously found only in much larger controls.

This dependable little device can be adjusted anywhere within the range of 0°F to 200°F. It is extremely sensitive to temperature variations and positive in action . . . maintains normal control characteristics under vibrations of up to 5 G's . . . is as rugged as it is tiny. It lends itself perfectly to electrical, electronic, radio, radar and other protective uses where space is at a premium.

For complete information on the new Fenwal unit, send for your FREE copy of the Miniature THERMOSWITCH control bulletin. **Write Fenwal Incorporated, 72 Pleasant Street, Ashland, Mass.**

Fenwal **THERMOSWITCH®**
Electric Temperature Control and Detection Devices
SENSITIVE...*but only to heat*

If you write maker identify as IEN-1958

Cure Your Condensation Problems!

NO MORE AIR LINE MAINTENANCE WITH
WILKERSON *Automatic* MOISTURE SEPARATORS

Positive action blasts out water and sludge with practically no pressure drop . . . does away with manual draining, protects your plant equipment. Designed for high efficiency in forcing condensation. These separators are full capacity* for the size lines they serve. Units for every popular line size from 1/4" to 2", low or high pressure. Also for tanks, sumps, compressors, aftercoolers, etc.

There is an efficient Wilkerson automatic model for every set-up. Manual drains also available. Write for literature on your company letterhead.

*Separator chamber must be big enough to assist condensation. Volume and shape are important. No 3/8" unit can serve efficiently a 1/2" line.

Service-distributors in most U.S. cities

WILKERSON CORPORATION

3469 S. PLATTE RIVER DRIVE, ENGLEWOOD, COLO.

If you write maker identify as IEN-1959

FREE! yours for the asking

This 20 page authoritative book on self-priming centrifugal pumps is yours for the asking — no strings attached . . . no obligation.

Now, with a trend in industry toward self-priming pumps, this profusely illustrated book, written by A. S. Marlow, Jr., will give you *all* the facts on centrifugal pump theory and self-priming pump operating principles.

Mail Coupon for your FREE copy today!

MARLOW PUMPS • RIDGEWOOD, NEW JERSEY

Please send me my free copy of "Self-Priming Centrifugal Pumps by A. S. Marlow, Jr.

Name _____

Address _____

City _____ Zone _____ State _____

If you write maker identify as IEN-1960

PIPE FITTING . . Clip coupling, 1/4 to 2 in., pressure to 1,500 pounds

Source: MASTER ENTERPRISE CORP.
Boulder Bldg., Dept. IEN, Tulsa, Okla.

Sample on request

The body of this new coupling can be specified in aluminum, brass or steel. It is bored to take standard tube or pipe and is fitted with a center shoulder against which the pipe ends locate. Recesses in the bore, near the two ends, carry O-ring gaskets.

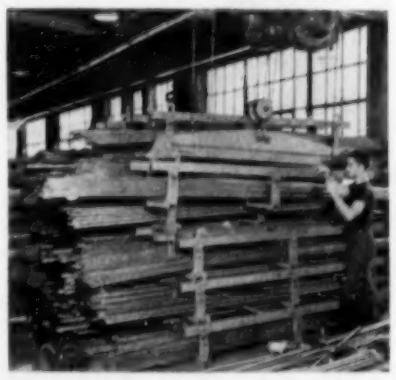
Spring clips ride in external grooves and lie at the two ends of the coupling to grip the pipe and prevent it from pulling out. The clips are shaped so the pipe or tube can be pushed in without interference. The clips can be depressed toward the center of the coupling to free the pipe for removal.

Sizes range from 1/4 to 2 inches. The O-rings can be specified in rubber or plastic compound, including silicone and teflon, for given service requirements. Weight of the smallest unit is 1/2 ounce. List price starts at 75 cents.

If you write maker identify as IEN-1961

HANDLING . . Rack and lift beam to pick up and stack bar stock, pipe

Source: JARKE MFG. CO.
5407 N. Broadway, Dept. IEN, Chicago 40, Ill.



Simplifies storage

Bar Stock Rack designates a new hook equipped rack assembly that operates in connection with a lift beam to which a crane or hoist can be attached. Bar stock, tube, pipe, structural shapes, can be loaded in unit quantities into the rack and then picked up and stacked or carried to a point of use. The rack is made of structural steel and is available in specified sizes and load capacities.

If you write maker identify as IEN-1962

You may be interested in securing copies of an instruction book written in Spanish, for distribution through your dealers in Spanish speaking countries, if you manufacture equipment that requires field servicing by hard facing. Stoody Co., 11928 E. Slauson Ave., Dept. IEN, Whittier, Calif., has published its "Stoody Guidebook" on the subject in Spanish and will send you copies.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN-1963

RELAYS BY COMAR • Hermetically SEALED or open •

RELAYS • SOLENOIDS
COILS
TRANSFORMERS
SWITCHES
HERMETIC SEALING

Complete Engineering, Manufacturing, Sealing, Plating, Painting, Imprinting Facilities

Illustrated are some of the sealed relays Comar can supply for use in aircraft, communications, radar controls, guided missiles, computors, etc. Other types for military and commercial applications also available.

Comar ELECTRIC COMPANY

Send for Details

3349 ADDISON STREET
CHICAGO 18, ILLINOIS

If you write maker identify as IEN-1964

Use over and over again!

CABOT'S BRUSH CLEANER

- Won't evaporate!
- Non-inflammable!
- Safe for finest bristles!
- Economical!
- Quickly cleans old hardened paint brushes!

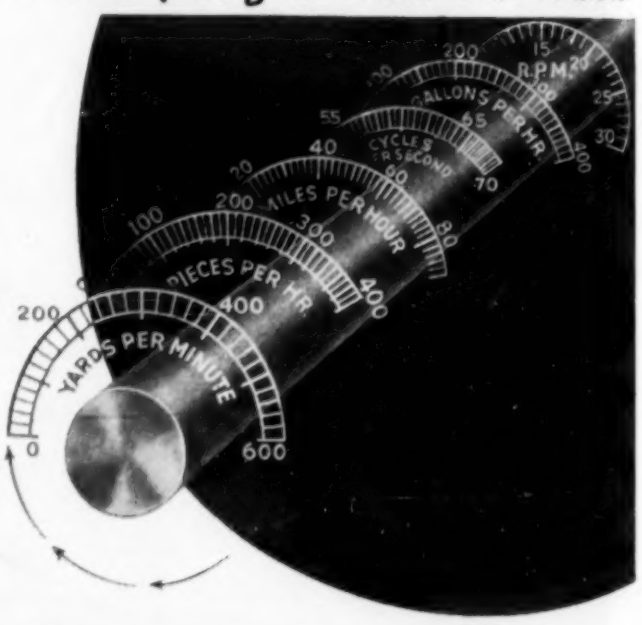
WRITE TODAY FOR FREE SAMPLE

See for yourself how Cabot's Brush Cleaner will restore your costly paint brushes to useful service.

SAMUEL CABOT INC. 233 Oliver Bldg. Boston 9, Mass.

If you write maker identify as IEN-1965

If some part goes 'round and 'round



...WESTON *Electrical Tachometers*

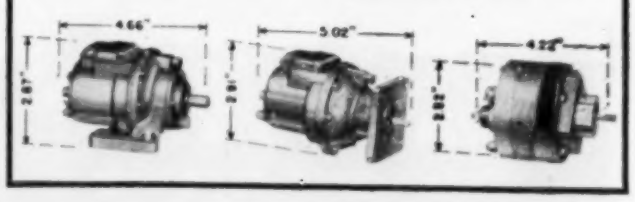
can provide a simple, accurate key to control!

Wherever instant, accurate measurement furnishes the key to precise control, equipment manufacturers now build-in WESTON Electrical Tachometers. For no other method approaches the electrical tachometer for simplicity, ease of installation, overall dependability and ready adaptability to problems of design.

The specially designed WESTON A-C and D-C Tachometer Generators, for example, save up to 50% in size and weight, and are available in forms to permit wide flexibility in mounting, and in connection arrangements. The WESTON Indicators, too, are available in required sizes and shapes, calibrated in any function of the RPM. Available to directly indicate speeds as low as 1/10 RPM up to 80,000 RPM.

Other advantages of electrical tachometers such as . . . multiple indications from one generator . . . remote indications . . . dependable, long-term accuracy . . . and low mantenance, warrant full investigation. Complete details gladly sent on request. WESTON Electrical Instrument Corporation, 614 Frelinghuysen Ave., Newark 5, N. J.

Space-saving • Weight-saving WESTON Generators



WESTON *Instruments*

If you write maker identify as IEN-1967

AA-267

IF you sell your products in rolls (like adhesive tape), or—if you use rolls in production (like printing or coating) then—**better rolls can build your profits** by reducing waste, by increasing production and by improving your products. Get the facts on Camachine roll slitters and rewinders, the **right** model for every material. Write today to

CAMERON MACHINE COMPANY
61 Poplar Street • Brooklyn 1, N. Y.

Camachine Commander High Speed Slitter Rewinder

Camachines

If you write maker identify as IEN-1968

it's here...
The NEW, REVOLUTIONARY
Collapsible
"PHIL-BOX"
Collapses from 28⅞" to 9 1/16" in Height

Sides are collapsed and placed in upright position ...in less than 20 seconds!

MODEL B-50

The new Phillips collapsible 5000 lb. capacity material handling "Phil-Box" is designed for saving space in storing and transporting bulk materials and parts. Quickly and easily collapsed or erected, the box interior measures 49" x 37" x 24". The "Phil-Box" has no pins or loose parts. Made of heavy gauge corrugated steel, it is of all welded construction—with smooth rolled edges for maximum safety. Can be stacked in collapsed or upright position. Fork lift or pallet truck can enter from all four sides for easy lifting.

Boxes stacked in collapsed position.

Boxes stacked in upright position.

Write for Bulletin E-14

MANUFACTURERS SINCE 1863 PHILLIPS (MINE AND MILL SUPPLY COMPANY) PITTSBURGH, PA.

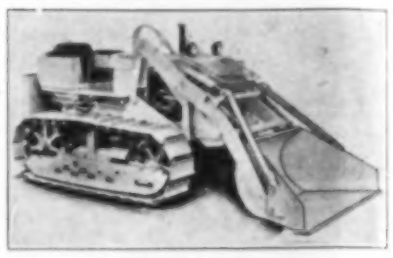
MATERIALS HANDLING EQUIPMENT

2500 JANE STREET • PITTSBURGH 3, PA.

If you write maker identify as IEN-1970

CONSTRUCTION . . Power shovel, tractor mounted to dig and load

Source: AMERICAN TRACTOR CORP.
198 Terra St., Dept. IEN, Churubusco, Ind.



Utility machine

Three models, in the company's new Terraload'r line, rate 26.3, 29 and 30 hp. in draw bar capacity. Smallest is equipped with a ½ yd. shovel. The other two have ⅝-yd. shovels. The 29-hp. unit has a diesel engine. The other two units in the new line are driven by gasoline engines.

The shovel is pivoted at the front rear-cutting edge for power transmission with minimum effort. Down pressure is employed for back filling operations. Steel track shoes are standard. Rubber track shoes or flat steel plates can be specified. Lift and controls are by hydraulic pressure.

If you write maker identify as IEN-1971

CONVEYING . . Rubber fabric belt employs an abrasion resistant cover

Source: RAYBESTOS-MANHATTAN INC.
61 Willett St., Dept. IEN, Passaic, N. J.

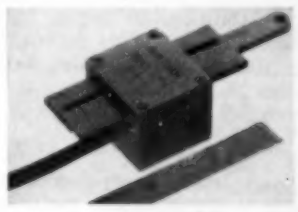
Technical data upon request

Type XDC designates new construction of the company's line of cord, fabric and rubber impregnated belts in which the integral cover is designed for resistance to abrasion and tearing in services involving the handling of ore, rock, coal. The new cover does not affect the flexibility of the strength carrying internal members. The belt is available in 24 to 60-in. widths and in 100 to 1,000-ft. lengths, or more to specification when required.

If you write maker identify as IEN-1972

CONTROL . . Linear transducer actuates remote electric instrument

Source: NORTH AMERICAN INSTRUMENTS INC.
2420 N. Lake Ave., Dept. IEN, Altadena, Calif.



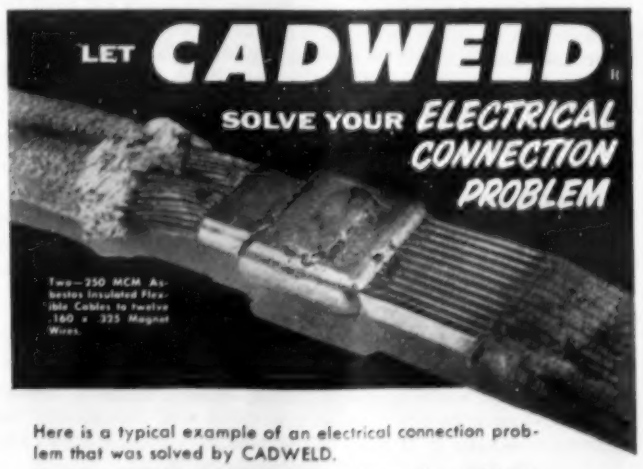
Also for testing

Model LP-1 is a new linear position transducer to convert linear motion or position into a proportional electrical signal for remote control, indicating or recording. A moving slide in the transducer controls the inductance difference between two coils to produce an unbalanced signal with output at plus or minus 40 millivolts per volt with maximum excitation at 7 volts.

The transducer can be employed in an ac. carrier circuit rating 60 to 10,000 cycles with accuracy within 1 per cent of the operating range. Slide travel ranges from ½ to 2 inches. Electrical components in the transducer are embedded in cavities in the 1-in. housing. Hermetic sealing can be specified.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN-1973



Here is a typical example of an electrical connection problem that was solved by CADWELD.

Twelve magnet wires (secondary windings of a resistance welding transformer) had to be connected to the output cable leads.

The finished connection had to:

1. Be small in over-all dimensions for reinsulation and assembly.
2. Be capable of withstanding high surge currents.
3. Be unaffected by continual high operating temperatures.

for the best in ELECTRICAL CONNECTIONS

The Current Trend IS CADWELD
ERICO PRODUCTS, INC.
1970 E. 61st PLACE CLEVELAND 3, OHIO

If you write maker identify as IEN-1974

PITTSBURGH GAS FIRED UNITS
obtain Accurate, Dependable Temperature Control
WITH

Pittsburgh Gas Fired Unit Heaters, manufactured by the Automatic Gas Equipment Company, Pittsburgh, Pa., are quality heaters designed to give maximum BTU value plus exceptionally long life.

To insure accurate temperature control, Automatic Gas Equipment Company uses Klixon Thermo-Snap Controls in their units.

Here's what Mr. N. L. Blackmore, Sales Manager, has to say about Klixon Thermo-Snap Controls:

"The small limit control, your C-4370, which we use is compact and takes up little space and does a very good job.

We have been using Klixon Controls for over fifteen years and have found them to be very durable and dependable."

What's your temperature problem . . . low and high limit controls, fuel delay switches, tube and rectifier cooling, fan switches, temperature control . . . Klixon Thermo-Snap Controls are meeting the requirements for these and other applications in military and civilian products, daily.

Klixon Thermo-Snap Controls are available in many hermetically sealed and open types in a wide variety of operating temperature ranges.

Klixon Engineers, specialists in temperature control applications, can help you solve your specific problems. Write for their help or further information.

METALS & CONTROLS CORPORATION
SPENCER THERMOSTAT DIVISION
202 FOREST STREET, ATTLEBORO, MASS.

KLIXON

If you write maker identify as IEN-1975

MUELLER BRASS CO.
600 SERIES
BEARING ALLOYS
FORGINGS • ROD • SCREW MACHINE PRODUCTS
proving their quality throughout American industry

Mueller Brass Co. "600" series bearing bronzes are lightweight, high strength copper-zinc base alloys with excellent bearing and mechanical properties, non-galling and non-seizing characteristics and good resistance to corrosion. There are six members of the "600" series . . . one for every purpose. Write today for complete information about the MUELLER BRASS CO. "600" series alloys for forgings, rod or screw machine products.

MUELLER BRASS CO. 119-A
PORT HURON 26, MICHIGAN

If you write maker identify as IEN-1976

OSTER presents the new 75 lb. "Featherweight Champ"

The all new Oster "Featherweight Champ", a Power Drive for Hand Pipe Tools, has just weighed in at 75 lbs. One man can move it and use it with ease . . . yet the "Featherweight Champ" is exceptionally sturdy and powerful. Ideal for "on the spot" threading, its range is ⅛" to 2", and it is available with either electric or gasoline power.

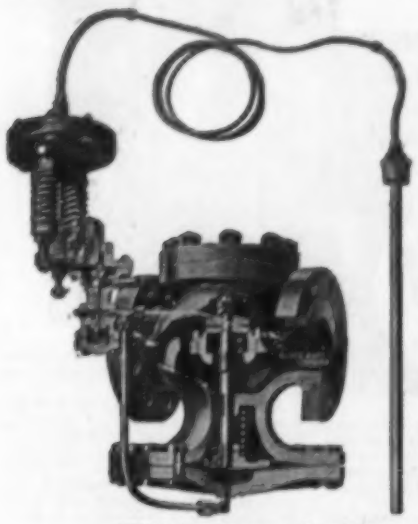
For the full story on the "Featherweight Champ" see your local Oster Distributor.

THE OSTER MANUFACTURING CO.
Main Office and Factory:
2053 East 61st St. • Cleveland 3, Ohio

Builders of Cost Reducing Threading Equipment Since 1893

If you write maker identify as IEN-1977

LOW COST
Temperature Control



Tops in performance for both storage and instantaneous heaters, this pilot-operated Spence regulator offers these important advantages:

SECO Metal Seats and Discs — 20 years experience has failed to produce a single case where SECO Metal has been cut by steam.

Packless Construction — minimizes friction . . . eliminates much time-consuming maintenance.

Large Metal Diaphragm—under usual conditions never requires replacement.

ET150 Temperature Regulator

New bulletin gives complete data on the entire line of Spence regulators. They are made in sizes from ¼" to 12" for service with air, steam, water, oil or gas. Write for your free copy of Bulletin 500 today.

SE-106

Spence

SPENCE ENGINEERING COMPANY, INC.
WALDEN, NEW YORK

If you write maker identify as IEN-1978

In shelving it's the erected cost that counts!

De Luxe steel shelving costs less

- Easy to Install
- 100% Adjustable
- Fewer Parts
- Easier to Adjust
- 80% Less Bolts
- Precision Made

A De Luxe factory representative is near you, ready to give you complete engineering, planning and layout service, without obligation. Write today for free catalog.

DE LUXE METAL FURNITURE CO.

DeLuxe

303 Struthers Street, Warren, Pa.

For over 25 Years Manufacturers of: Storage Shelving
Library Shelving • Storage Cabinets • Shop Equipment

If you write maker identify as IEN-1979

Check with FAIRFIELD for Power Gears

MASS production of fine gears is an accomplishment that requires the ultimate in manufacturing facilities and experience. And it's all here at Fairfield—metallurgical department, batteries of the most modern machines, complete heat treating equipment, all operated by skilled craftsmen producing truly fine gears. Here is more than 30 years of experience translated into the gear-making "know-how" that is essential to manufacturing high quality, dependable gears.

Our facilities are complete for producing gears for a wide variety of applications. Why not consult Fairfield on your next gear problem? Your inquiry will receive prompt attention.

Fine Gears Made to Order:
SPIRAL BEVEL
STRAIGHT BEVEL
HYPOID
HERRINGBONE
HELICAL
DIFFERENTIALS
SPUR
WORMS AND WORM GEARS

FAIRFIELD MANUFACTURING CO.
2333 S. Concord Road Lafayette, Indiana

NEW LITERATURE

Brief reviews to advise you of available new information published by the manufacturers covering products they offer for your use. Each includes identification, size of the material, information it contains so you can judge its value to you.

If you write maker identify as IEN-097

BROACHING . . Development of surface broaching as a machining method is described in 12-page 35th Anniversary issue of "Broaching News." Troubles encountered and how they were solved make interesting reading. Colonial Broach Co., Box 37, Dept. IEN, Detroit 13, Mich.

If you write maker identify as IEN-098

BUILDINGS . . Corrugated aluminum roofing and siding application instructions, suggested fasteners and methods of applying them, flashing details, corrosion resistance data. Bulletin AD-285, 16 pages. Aluminum Co. of America, 1501 Alcoa Bldg., Dept. IEN, Pittsburgh 19, Pa.

If you write maker identify as IEN-099

BUILDINGS . . Porcelain-enamel prefabricated buildings and building fronts are shown in 8-page "Custom-Prefabricated" bulletin along with installation detail drawings. Erie Enameling Co., 1450 W. 20th St., Dept. IEN, Erie, Pa.

If you write maker identify as IEN-0100

CAPACITORS . . Catalog 200-D has 40 pages of rating, size and list-price information on service replacement capacitors for electronic and other applications. Also printed circuits. Cornell-Dubilier Electric Corp., 1000 Hamilton Blvd., Dept. IEN, South Plainfield, N. J.

If you write maker identify as IEN-0101

RECORDER CHARTS . . 1954 Catalog, 30 pages, lists thousands of round and strip charts for standard makes of recording instruments. American Recording Chart Co., 3113 E. 11th St., Dept. IEN, Los Angeles 23, Calif.

If you write maker identify as IEN-0102

PRINTED CIRCUITS . . Plastic-base copper-conductor components eliminate wiring errors, make dip-solder methods possible, minimize physical size, facilitate design changes. Outline specifications on file card, "Print-Wire Circuit Boards." General Electric Co., 1949 Electronics Park, Dept. N-13, Syracuse 1, N. Y.

If you write maker identify as IEN-0103

BLAST CLEANING . . Wet-blast machine removes scale, burs, grinding lines from tools, dies, molds, precision metal parts. It is a reach-in design with a small hand-held gun. Bulletin 93, 4 pages. American Wheelabrator & Equipment Corp., 1119 S. Byrkit St., Mishawaka, Ind.

If you write maker identify as IEN-0104

VACUUM CLEANING . . Condensed summary for your reference file on small cleaners, large units, sump-tank cleaners, portable and stationary models. Bulletin 152, just issued, 4 pages. Spencer Turbine Co., 485 New Park Ave., Dept. IEN, Hartford 6, Conn.

If you write maker identify as IEN-0105

ELECTRONIC CONNECTORS . . Hermetically-sealed terminals are made of hard Pyrex glass preformed to resist shock and abuse. Preferred types in 6-page Bulletin 949-A. Electrical Industries Incorporated, 42 Summer Ave., Dept. IEN, Newark 4, N. J.

If you write maker identify as IEN-0106

CONSTRUCTION . . Moil points, chisels, cutters, scoops, boulder breakers are among the tools and accessories for paving breakers in 12-page Bulletin 4126. Ingersoll-Rand Co., 746 Morris Ave., Dept. IEN, Phillipsburg, N. J.

If you write maker identify as IEN-0107

PROCESS CONTROL . . Instrument and control boards for process operation and electrical use. Bulletin 700, 8 pages, shows picture examples. Continental Electric Equipment Co., Box 1055, Dept. IEN, Cincinnati 1, Ohio

If you write maker identify as IEN-0108

TEMPERATURE CONTROL . . Electronic unit regulates hot-water heat to a building, has adjustable-ratio outdoor reset at a panel. How it works on a Wheatstone bridge principle is told in 8-page Bulletin F-6167. Barber-Colman Co., 1300 Rock St., Dept. IEN, Rockford, Ill.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN-1980

HOBBS

COTTER PINS

LOXIT
Extended Prong

HOBLOK
Hammer-Lock Type

Locks itself when hit with hammer!
No bending of prongs required!

Choose the type that's best for *your* production job! Both are available in steel, brass, stainless steel, and monel.

HOBBS "TANGLE-PROOF" LOCKWASHERS are available in high carbon steel, stainless steels, silicon and phosphor bronze, and all types of platings.

Write now for Hobbs lock washer and cotter pin price lists!

HOBBS MANUFACTURING CO.
Fastener Division
40 SALISBURY ST., WORCESTER 5, MASS.
EST. 1882

If you write maker identify as IEN-1981

Reduce Fire Hazards!

Get HOUGHTON'S New PLANT SAFETY BULLETIN

. . . shows you how Houghton processing products reduce the danger of fire four ways in metal-working plants. Covers Houghton's high-flash-point solvent type RUST PREVENTIVES . . . water-solution COLD CLEANERS for production lines . . . non-flammable HYDRAULIC FLUID . . . Antisep All-Purpose CUTTING BASE for water-emulsion machining. Ask the Houghton Man for a copy or write to E. F. Houghton & Co., 303 W. Lehigh Avenue, Philadelphia 33, Pa.

E F HOUGHTON & CO. PHILADELPHIA 33, PA.

If you write maker identify as IEN-1982

MET-L-WOOD
METAL BONDED TO PLYWOOD

Has Hundreds of Structural Uses in Modern Plants

To Name a Few:

- Walls and Partitions
- Doors
- Counters and Shelves
- Traffic Panels
- Truck Bodies (Patented "Ribless" Construction)
- Truck Body Panels
- X-Ray Rooms
- Moisture-Vapor-Proof Rooms and Containers
- Decorative Finishes

Met-L-Wood stock panels and prefabricated units are a challenge to modern industrial engineers and designers because of their multiple possibilities in economical, structurally-sound designs in hundreds of varied uses. Best start toward thinking in terms of Met-L-Wood design opportunities is to send for the Bulletin described below . . . Met-L-Wood Engineering Service is available without obligation on specific problems.

SEND FOR THIS BULLETIN ON MET-L-WOOD USES AND ADVANTAGES

Quick facts, with illustrations and diagrams on Met-L-Wood applications, types, possibilities. Sent without obligation on request.

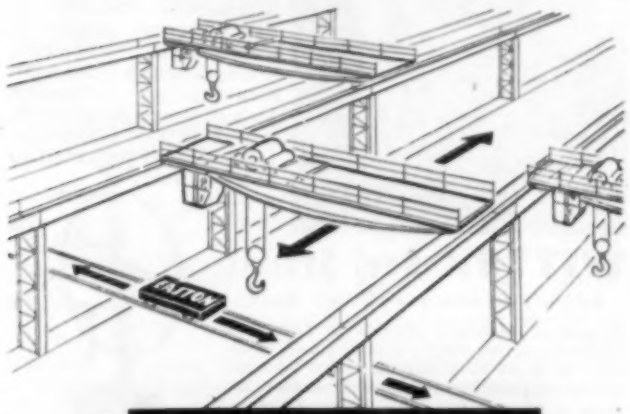
Met-L-Wood is metal bonded to plywood—permanently. Many metals, woods, thicknesses, shapes, finishes are available to meet YOUR requirements.

MET-L-WOOD CORPORATION
6755 West 65th Street • Chicago 38, Illinois
"Met-L-Wood . . . opening new horizons to structural designers"

If you write maker identify as IEN - 1983

Cross-Bay Transfer

Automatic motor driven transfer cars provide a universal handling system in modern parallel bay plants now served by overhead cranes. Also for transfer between plant buildings.



A-1040

® EASTON

EASTON CAR & CONSTRUCTION CO. • EASTON, PA.

If you write maker identify as IEN - 1984

NEW... A BETTER BLUE M OVEN

New Design... for easier operation.
Greater temperature range... 37°C. to 288°C.

Power saver... The Blue M Power Selector Switch saves you dollars of current per year, by rating input wattage to temperature. A real time saver too...with it you can heat the oven quickly, then lower to the wattage necessary to maintain constant temperatures. You don't overshoot or undershoot with a Blue M Oven.

Automatic Hydraulic Thermostat... response sensitivity ±½°C... keeps temperatures at desired level. U. L. approved.

New Convenience... Recessed control panel protects controls from spillage or accidental bumping. All controls are grouped for easy handling.

All Stainless Steel... A beautiful practical oven especially resistant to corrosive atmospheres. Dual banked extra heavy duty Modella Elements. All six sides now have 3½" of compressed Fiberglas insulation. Chromed hardware, pressure release latch. Before you buy... ask your dealer to show you a Blue M Oven ...see for yourself how much you get for your money.

SPECIFICATIONS AND PRICES
(All ovens ready for instant use)

Model	Inside Dim. (inches) W.	D.	H.	Max. temp.	Prices
OV-18SA	19	18	15	288°C.	$275.00
*OV-18A	19	18	15	288°C.	195.00
OV-12	12	12	12	232°C.	137.50
OV-8	8	8	8	204°C.	87.00

*Stainless Steel interior only
(Prices are for 115 Volts 50/60C. AC...230 Volt or DC models $10.00 extra)

BLUE M ELECTRIC COMPANY
306-308 West 69th Street, Chicago, Illinois

NEW LITERATURE—Continued

If you write maker identify as IEN - 0109

CONVEYING EQUIPMENT . . Power belt, gravity wheel and roller types in 16-page Catalog GC-53 are shown for specific handling problems. Ideas by industry are listed in case-history reports. Rapids-Standard Co., 342 Rapistan Bldg., Dept. IEN, Grand Rapids 2, Mich.

If you write maker identify as IEN - 0110

CONVEYOR BELTS . . Specification summary on 12 types of rubber-fabric belts includes service recommendations. Some are for abrasive, hot, oily or food products. "Belting for Industry," 4 pages. Hamilton Rubber Mfg. Corp., Box 361, Dept. IEN, Trenton 3, N. J.

If you write maker identify as IEN - 0111

CORROSION PROOFING . . Wrapping paper is impregnated with a volatile chemical that protects metal parts from rust. How others are using it for shipping and storage is shown in 16-page "Wrap Out Rust." Nox-Rust Chemical Corp., 333 N. Michigan Ave., Dept. IEN, Chicago 1, Ill.

If you write maker identify as IEN - 0112

CORROSION PROOFING . . Color chips in 20-page "Stop Rust" catalog are on a line of primers, long-oil and short-oil paints, chemical and heat-resistant materials. There is a "Restful Color" group for interior and machinery surfaces. Rust-Oleum Corp., Box 110, Dept. IEN, Evanston, Ill.

If you write maker identify as IEN - 0113

SHAFT COUPLINGS . . Gear and flexible-pin types, an overload cutout, and a Junior gear model of nylon plastic are described in 8-page Catalog 55 with hp. tables. John Waldron Corp., Box 791, Dept. IEN, New Brunswick, N. J.

If you write maker identify as IEN - 0114

CARBIDE CUTTING TOOLS . . Standard carbide-tipped lathe tools have sizes and list prices given in 4-page Catalog T-53. Standard carbide blanks for tools and parts in 8-page Price List 853. Adamas Carbide Corp., 1000 S. 4th St., Dept. IEN, Harrison, N. J.

If you write maker identify as IEN - 0115

DOOR OPERATORS . . Electric Doorman operators for plant doors and gates are summarized in 8-page Catalog 1000. The doors can be in swinging, folding, sliding, overhead and craneway types. Electric Power Door Co., 2127 E. Lake St., Dept. IEN, Minneapolis 7, Minn.

If you write maker identify as IEN - 0116

DOOR OPERATORS . . What to look for in selecting a door closer, how pneumatic and hydraulic-check models work, standard models and how to select them, accessories for special locations. Bulletin C-19, 8 pages. Yale & Towne Mfg. Co., 200 Henry St., Dept. IEN, Stamford, Conn.

If you write maker identify as IEN - 0117

DRAFTING FURNITURE . . Steel drawer cabinets, drafting tables and accessories, illuminated tracing table, film filing cabinets. Catalog 553, 24 pages. Stacor Equipment Corp., 768 E. New York Ave., Dept. IEN, Brooklyn 3, N. Y.

If you write maker identify as IEN - 0118

DRIVE BELT . . Individual links of the Veelos TD and TE adjustable V-belts assemble by means of cup-washers and T-screws. A belt can be coupled, uncoupled, lengthened or shortened as desired. Bulletin 714, 8 pages. Manheim Mfg. & Belting Co., Railroad Ave., Dept. IEN, Manheim, Pa.

If you write maker identify as IEN - 0119

RECIPROCATING DRIVE . . Motocylinder is a gearmotor that operates through a crank to deliver a reciprocating motion with an 8 to 24-in. stroke. How to use it is described in 8-page Bulletin B-6090. Westinghouse Electric Corp., 511 Wood St., Dept. IEN, Pittsburgh 30, Pa.

If you write maker identify as IEN - 0120

DRYING . . Package-type dehydrating unit for air and gases employs a solid absorbent such as Sovabead, activated alumina, silica gel. Drying instrument air is an example of use. Bulletin 16.0.081, 8 pages. J. F. Pritchard & Co., 210 W. Tenth St., Dept. IEN, Kansas City 5, Mo.

If you write maker identify as IEN - 0121

FREEZE DRYING . . Foods, antibiotics, blood plasma are among unstable products processed by vacuum sublimation or freeze drying. Catalog 735, 20 pages, "Freeze-Drying in Industry." F. J. Stokes Machine Co., 5500 Tabor Road, Dept. IEN, Philadelphia 20, Pa.

If you write maker identify as IEN - 0122

ELECTRONIC TUBES . . Power triodes, tetrodes, rectifiers, thyratrons, magnetrons, ignitrons, radiation-counter tubes. Catalog, 24 pages. Amperex Electronic Corp., 228-32 Duffy Ave., Dept. IEN, Hicksville, N. Y.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 1986

You can cut and join this floor plate to any shape you need,
And Multigrip will fabricate with utmost ease and speed;
For Multigrip is so designed to make the sections match
Placed end to end, or side to side, or in a side-end patch...
The pattern that is formed will be the same from all directions,
And Multigrip needs fewer joints; it comes in bigger sections!

U·S·S multigrip FLOOR PLATE

UNITED STATES STEEL CORPORATION, PITTSBURGH
COLUMBIA-GENEVA STEEL DIVISION, SAN FRANCISCO
TENNESSEE COAL & IRON DIVISION, FAIRFIELD, ALA.
UNITED STATES STEEL SUPPLY DIVISION, CHICAGO
UNITED STATES STEEL EXPORT COMPANY, NEW YORK

Sold by leading distributors from coast to coast 3-66

UNITED STATES STEEL

If you write maker identify as IEN - 1987

"The new G Bond ALUNDUM wheels give us double the production of previous wheels," reports a manufacturer grinding hardened high speed steel textile blades. He adds: *"Wheels on this job must cut very cool and free to avoid burning the very thin stock."*

Users say:
For surface grinding, the new G BOND *beats them all!*

G Bond wheels in your own surface grinding will bring new speed and economy to every job — thanks to their unique grain-holding structure that produces greatly improved cutting action. Remember, the G Bond is the most modern, most efficient vitrified bond ever developed — a typical Norton "Touch of Gold" achievement that steps up grinding performance and product quality while cutting grinding costs.

See your Norton Distributor for the G Bond wheels, cylinders and segments you need. Or write to NORTON COMPANY, Worcester 6, Mass. Distributors in all principal cities. *Export:* Norton Behr-Manning Overseas Incorporated, Worcester 6, Mass.

NORTON ABRASIVES
Making better products... to make other products better

W-1538

If you write maker identify as IEN - 1988

ALUMINUM LOUISVILLE LADDERS

NEW

MASTER PLATFORM
WITH THOSE PLUS FEATURES FOR INDUSTRIAL MAINTENANCE

Extra sturdy, extruded aluminum side rails double riveted to wide facing flange of the extruded steps. Special reinforced braces on both sides of the bottom step and on all horizontal braces fastened to the extra large back legs. Platform area is 14 x 19 inches made of special hot shaped sections with knurled surfaces. Guard rail top recessed to provide ample leg room. Serrated step treads... corrugated rubber feet.

The RESULT...
GREATER STABILITY
LONGER SERVICE

LOUISVILLE LADDER COMPANY
1101 W. OAK ST. • DEPT. 2B • LOUISVILLE 10, KY.

If you write maker identify as IEN - 1989

Hit 'em high . . . hit 'em low
Come on boxcar door—let's go!

Why use 14th Century methods to open balky, hard-to-roll boxcar doors? Why endanger lives and limbs? Why waste labor, time and money?

THE NOLAN ONE-MAN CAR DOOR OPENER OPENS ANY BOXCAR DOOR IN 20 SECONDS OR LESS!

A few quick pulls on the anchor chain by one man and the door rolls open. The NOLAN saves its low initial cost in the first hour of operation.

NOLAN ONE-MAN CAR DOOR OPENER
Order one or more now!
Free Literature
$37.50
F. O. B. Bowerston

THE NOLAN COMPANY 114 Pennsylvania St. Bowerston, Ohio

If you write maker identify as IEN - 1990

It's automatic!

SEALS CARTONS FASTER

...reduces packer fatigue

New NATIONAL "88" ELECTRIC TAY-PER®

- Foot operated — both hands free for carton handling.
- Tape-Mizer permits unlimited selection of tape lengths from 6" to 70".
- Cuts accurate lengths. No wasted tape!
- Thorough and uniform all-over moistening of gummed surface.
- Pays for itself quickly in tape, time and labor saved.

itstix® PRINTED TAPE

Designed for use with the National "88" Electric Tay-Per. Welds itself to the carton, preventing product damage. Itstix Printed Tape seals against pilferage since packages cannot be retaped without detection. Gives your product positive identification as well as effective advertising.

FREE 10-day Trial OFFER

Try this modern package sealing machine in your shipping room for 10 days without cost or obligation. See how much time, labor, and money you save when your tape dispenser and gummed sealing tape are designed to *work together*.

NASHUA PACKAGE SEALING
DIVISION OF NASHUA CORPORATION
84 Franklin Street, Nashua, N. H.

Without obligation, please have a representative call and install a National "88" Electric Tay-Per for a FREE 10-day trial.

Name _____ Title _____
Firm _____
Street _____
City & State _____

NEW LITERATURE—Continued

If you write maker identify as IEN - 0123

ELECTRONIC PRODUCTS . . Components including resistors, switches, capacitors, powdered-iron cores, molded core forms, metallic-oxide cores. Catalog RC-9, letterhead request please, 56 pages. Stackpole Carbon Co., 1942 Tannery St., Dept. IEN, St. Marys, Pa.

If you write maker identify as IEN - 0124

ENGRAVING . . Tracer-guided machine to do lettering or numbering on nameplates, parts, micrometer barrels, scales. Fifteen sizes can be done from one template by adjusting pantograph arms. "Tracer Guided Engraving," 24 pages. New Hermes Engraving Machine Corp., 15-17 University Pl., Dept. IEN, New York 3, N. Y.

If you write maker identify as IEN - 0125

FASTENINGS . . Serrated teeth on one end of the Bulldog expansion-type anchor drills a hole into concrete or masonry as the other end is hammered in a holder. Once the hole is drilled, the anchor is expanded and set. "Installation Manual," 8 pages, shows steps. J. D. Polis Mfg. Co., 2900 W. 26th St., Dept. IEN, Chicago 23, Ill.

If you write maker identify as IEN - 0126

COOLANT FILTER . . Continuous self-cleaning gravity filter now is offered as optional equipment on Besley surface grinding machines. "Delpark-Besly Coolant Filter," 4 pages. Industrial Filtration Co., Dept. B-195, Lebanon, Ind.

If you write maker identify as IEN - 0127

LIQUID FILTERS . . Pressure-leaf filters for liquid clarification and solids recovery come in vertical and horizontal designs. Six-step operating cycle in 20-page Catalog NC-1-53. Niagara Filters Div., American Machine & Metals, Dept. IEN, East Moline, Ill.

If you write maker identify as IEN - 0128

GAGES . . Dial indicator units with .001, .0005 and .0001-in. graduations, also assembled into test sets, bench checking and snap gages. List prices on these and accessories in 16-page Catalog 106. Chicago Dial Indicator Co., 180 N. Wacker Drive, Dept. E, Chicago 6, Ill.

If you write maker identify as IEN - 0129

COMPARATOR GAGE . . Electrolimit internal comparator combines mechanical gaging with electrical magnification of the readings. It can be used by a machine operator or inspection department. Bulletin 567, 16 pages, shows standard scales and uses. Pratt & Whitney, 49 Charter Oak Blvd., Dept. IEN, West Hartford 1, Conn.

If you write maker identify as IEN - 0130

ELECTRONIC GAGE . . Shop instrument measures amount of microinch waviness on machined, ground and finished surfaces. 8-page bulletin, "Wavometer," tells how it works and how the readings can be used in control. Micrometrical Mfg. Co., 345 S. Main St., Dept. IEN, Ann Arbor, Mich.

If you write maker identify as IEN - 0131

ULTRASONIC GAGE . . Measure thickness from one side with the company's ultrasonic-resonance gages. "Specifications" folder, 4 pages, tabulates information on three models to assist in selection. Branson Instruments, Inc., 430 Fairfield Ave., Dept. IEN, Stamford, Conn.

If you write maker identify as IEN - 0132

GRINDING WHEELS . . Full-size drawings and list prices of mounted wheels with porcelain or resinoid bond and in a variety of shapes. Catalog 30, 8 pages. Metal Removal Co., 1546 N. Orleans St., Dept. IEN, Chicago 10, Ill.

If you write maker identify as IEN - 0133

GRINDING WHEELS . . Foundry and steel-mill snagging wheels for billets, castings and portable-tool use; recommendations by type of service and material in 12-page Bulletin ESA-62. Simonds Abrasive Co., Fraley & Tacony Sts., Dept. IEN, Philadelphia 37, Pa.

If you write maker identify as IEN - 0134

HEATING ELEMENTS . . 64-page Catalog GEC-1005E covers Calrod electric heating elements in immersion, strip, fin, cartridge, tubular types, together with unit heaters, soldering irons, melting pots, controls. Index by process covers 6 pages. Information on calculating power requirements and heat losses occupies another 6 pages. List prices are given. General Electric Co., Dept. 6X-201, Schenectady 5, N. Y.

If you write maker identify as IEN - 0135

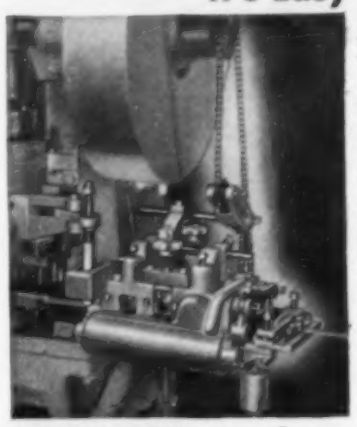
UNIT HEATER . . Direct fired by an oil burner, Model UH-220 unit heater can be located as required to take advantage of its 220,000 btu. output rating. Installation suggestions in 4-page Bulletin UH-220. Delta Heating Corp., Cole St., Dept. IEN, Trenton 8, N. J.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 1992

Get RAPID-FIRE PRODUCTION from your PUNCH PRESSES

It's Easy with WITTEK Automatic Roll Feeds



Wittek automatic roll feeds fit all makes and sizes of punch presses — provide maximum efficiency and extreme accuracy in the high speed automatic feeding of strip stock. Made in single roll, double roll, and compound types with straighteners, in models to feed (push or pull) in any direction. Length of feed is easily adjusted to meet individual requirements.

WITTEK Reel Stands
Simplify Handling of Coiled Stock

Choice of standard models to facilitate handling coiled stock . . . from small, light coils to those weighing up to 800 pounds. Larger reel stands automatically center the coils — provide frictional braking action to prevent overrunning, maintain uniform coil slack.

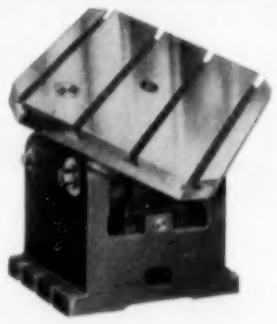
Write for full particulars

WITTEK Manufacturing Co.
4336 W. 24th Place, Chicago 23, Illinois

Automatic ROLL FEEDS AND REEL STANDS

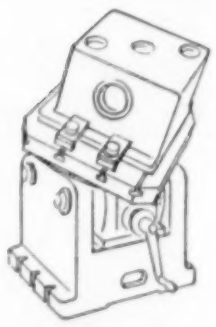
If you write maker identify as IEN - 1993

universal tables



save up to 50% of set up time on radials and boring mills

With one set up on Cincinnati Gilbert universal tables, you can drill at any angle up to 90° on five sides of a cube. Special feature: four-point support of the work in the lowered position takes strain off the worm, provides greatest possible rigidity of the work, best insurance of accuracy. Table sizes: 22" and 27" square. Height: 22". Four ¾" tee slots. Write for Bulletin 850.



THE CINCINNATI GILBERT MACHINE TOOL COMPANY
3366 BEEKMAN ST. • CINCINNATI 23, OHIO

RADIALS
BORING MILLS
ACCESSORIES

If you write maker identify as IEN - 1994

6 Reasons why YOU need the New "BUSTER" Strap Breaker

Opens STEEL-STRAPPED CONTAINERS in a Jiffy

1. Pays for itself in a month's time!
2. Removes hazards of makeshift tools.
3. Valuable where heavy loads are handled right up to the machines. Use it once and you'll never be without it!
4. Speeds car unloading.
5. Rugged—made to last. No sharpening or maintenance —Heat treated parts—last indefinitely.
6. Fast—Efficient—Safe.

Higher Wear of the Buster $4.95

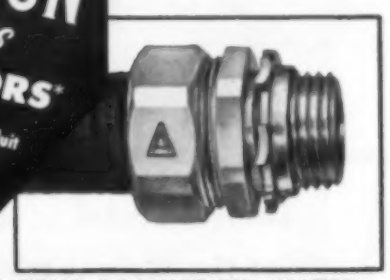
THE Lidseen COMPANY
825 S. CENTRAL AVE. • AUstin 7-2481 • CHICAGO 44, ILL.

If you write maker identify as **IEN - 1995**

APPLETON "ST" Series CONNECTORS

for Liquid Tight Flexible Conduit

The ONLY Fittings of Their Kind!



Quick, Easy to Install!

SEAL WIRING SYSTEMS AGAINST OIL, WATER, DIRT, GREASE, ACIDS and CHEMICALS

• Here are flexible conduit connectors with a big plus! Appleton "ST" Series Connectors not only stay tight, but assure positive exclusion of liquids, fumes, chips, shavings and other foreign matter from machinery electrical systems. As a result, costly shutdowns and loss of man hours are eliminated!

Appleton "ST" Series Connectors come in straight, 45° and 90° to fit flexible conduit sizes from ⅜" to 1¼". Also, 1½" and 2" straight. They provide a positive ground between conduit and connectors and maintain voltage within 10 millivolts drop.

For complete information, contact your wholesaler or write, today!

APPLETON ELECTRIC COMPANY
1716 Wellington Ave., Chicago 13, Ill.
Also Manufacturers of

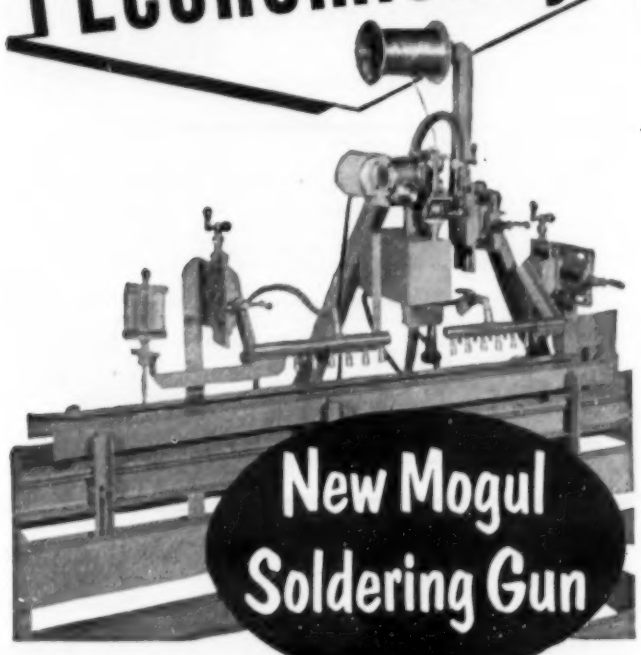
If you write maker identify as **IEN - 1996**

Production

Soldering

BETTER JOBS FASTER more

Economically



New Mogul Soldering Gun

Complete with Fixtures and Conveyer

Save Labor, Solder... Increase Production

This new MOGUL unit is built to deposit silver, lead, and tin base solders in a liquid or semi-liquid form . . . faster, cleaner . . . to any constant moving part. This new automatic soldering gun replaces the soldering bath, hand soldering, and in many cases, expensive fixtures. Quickly adapted to various size parts. Adjustable to speed of work . . . gives pin-point location for cleaner seams.

BETTER WORK APPEARANCE

Deposits solder or brazing wire to the exact spot for cleaner seams. This new MOGUL soldering gun is now in wide use, saving time and money, increasing production, and turning out a better-looking product.

Write today for new MOGUL SOLDERING GUN bulletin

METALLIZING COMPANY OF AMERICA
Dept. IEN
3520 W. Carroll Avenue, Chicago 24, Ill.
Telephone: SAcramento 2-3710

If you write maker identify as **IEN - 1998**

MOTOR . . General purpose dc. with blower equipped cooling unit

Source: GENERAL ELECTRIC CO.
Dept. 6X-201, Schenectady 5, N. Y.

Efficient heat transfer

Two blowers, each motor driven, are employed in the cooling unit that forms a part of this new dc. motor assembly. One blower forces cooling air from the room through external passages in the cooler. The other forces internal motor air through closed internal passages. Both blower motors are standard totally enclosed design for three-phase 60-cycle power supply.

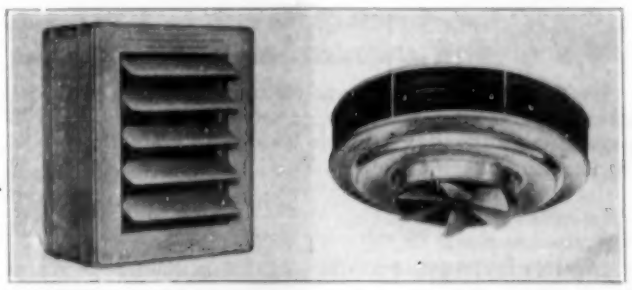
They are connected through a magnetic switch controller that can be interlocked with the controller to the main dc. motor so both are started simultaneously. A thermostatic relay protects the main motor in the event of blower motor failure. Relay contacts can be supplied to cut off the main motor or sound an alarm.

The dc. motor is available in ratings from 15 to 200 hp. for constant or adjustable speed duty in connection with machine tools, material handling equipment and equipment employed in paper, cement, chemicals, rubber and steel mills.

If you write maker identify as **IEN - 1999**

HEATING . . Steam heated space units, horizontal and vertical air delivery

Source: UNION ASBESTOS & RUBBER CO.
332 S. Michigan Ave., Dept. IEN, Chicago 4, Ill.



Technical data upon request

Unarco trade names the company's new line of steam heated space heating units, based upon the original Nevinger design which the company took over in 1953. Both units can be employed with either steam or hot water and are available in a range of sizes. The vertical unit, in double-row heating element construction, rates 55,300 to 585,000 btu. on 2-lb. steam and 60-deg. F. entering air. Air handling capacity is 700 to 7,900 cfm.

The housings are made of 18-gage steel. The propeller type fan is dynamically balanced and equipped with formed aluminum blades riveted to a semi-steel hub. The constant speed motor operates at 1,725 rpm. or less. It is mounted so it is isolated from the coil in the heated air stream.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as **IEN - 2000**

INTERCHANGEABLE READY-POWER OFFERS 4 IMPORTANT ADVANTAGES

OVER OTHER GAS-ELECTRIC DRIVES

1 Only Ready-Power Units can be quickly changed. Installation takes just 5 minutes!

2 Only Ready-Power can be shifted from one truck to another.

3 Only with Ready-Power can trucks be kept working with quick change of power units.

4 Ready-Power's low engine speed means longer life, lower maintenance.

Remember . . . Your Truck Is No Better Than Its Power!

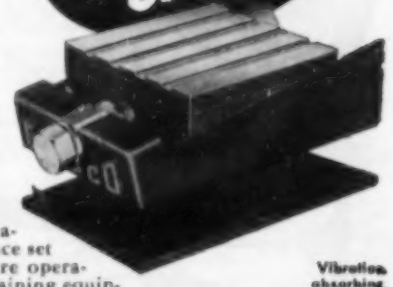
The READY-POWER Co.
3830 Grand River Ave., Detroit 8, Michigan
Manufacturers of Gas and Diesel Engine-Driven Generators and Air Conditioning Units; Gas and Diesel-Electric Power Units for Industrial Trucks

If you write maker identify as **IEN - 2001**

Here's how to SAVE TIME in SETTING-UP and KEEPING your MACHINES LEVEL

Fast Accurate Self-Aligning Machine Leveler

Empco JACK



Empco Jacks enable you to meet hurry-up demands for relocation of machinery by giving you the fastest, easiest, most accurate machine leveling ever known: you simply raise or tilt machine sufficiently to allow the Empco Jacks to be slipped under base. The number of jacks required depends on weight of machine and size of base. Once set on Empco Jacks, the entire operation of leveling and maintaining equipment level is quickly done. By applying a wrench to the "hex" head of adjusting screw, an adjustment is obtained either up or down until your level indicator reads "zero." Write for specifications and prices today.

Vibration absorbing mounting pads increase machinery life.

EMPCO PRODUCTS

THE ENTERPRISE MACHINE PARTS CORPORATION
2737 JEROME AVENUE • DETROIT 12, MICHIGAN

If you write maker identify as **IEN - 2002**

Makes "Women's Work" of Handling DOUBLE-FACED PALLETS

Magic "Toggle-Booster" floats the truck into the pallet with minimum jolt or jar.

Easiest, quickest way to handle palletized loads—for short hauls, spotting loads or in congested areas. Just roll the truck into the pallet, lift the load and roll it away. Short stroke pump projects rear wheels through bottom face of pallet—lifts any load up to 400 lbs. easily.

the SERVICE LEVER-LIFT*

*Write for Circular 411.

SERVICE CASTER & TRUCK CORP.

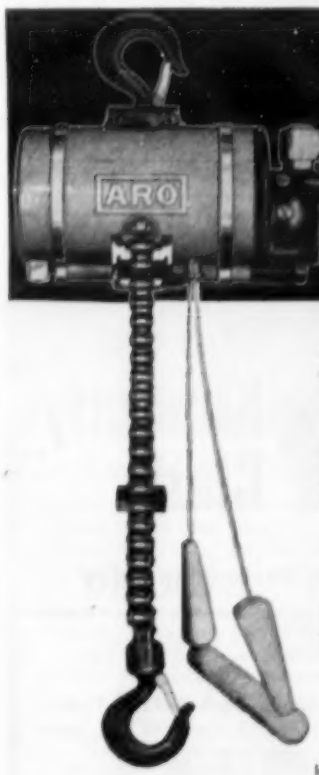
INDUSTRIAL Made EASIER and SAFER

Executive Offices: Albion, Michigan • Plants at Albion, Michigan and Somerville 43, Mass.
See Your Classified Telephone Directory for Nearest Distributor

For More Information Circle 347 on Reader Service Card

If you write maker identify as **IEN - 2003**

ARO 1000 pound AIR HOIST



SPEED... Lift rate . . . over 40 ft. per minute!

SIZE... Overall length 10¼" weighs only 28½ lbs.

SAFETY... Betters all safety requirements!

Write for full details.
The Aro Equipment Corporation
Bryan, Ohio
Offices in All Principal Cities
In Canada—Aro Equipment of Canada, Ltd. Toronto, Ont.

ARO AIR HOIST

Also . . . Air Tools . . . Lubricating Equipment . . . Aircraft Products . . . Grease Fittings

If you write maker identify as IEN - 2004

AMES

...the preferred

... not because they cost more (in the long run they're more economical) but because they're completely impersonal!

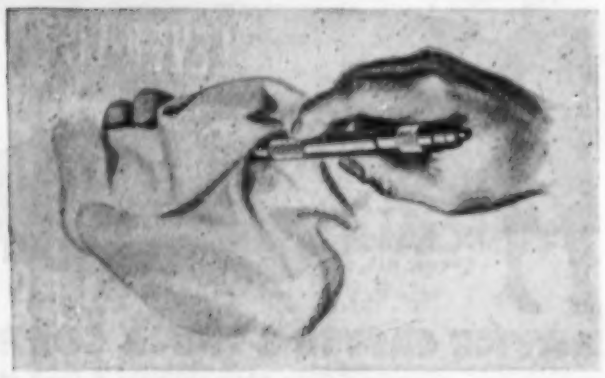
Ames Micrometer Dial Gauges and Indicators meet the demand for increasingly critical precision instruments. They are built by exclusive Ames methods and machines, and 100% checked for accuracy. They are extremely sensitive yet ruggedly built to give you *longer* service with *less* down-time.

Representatives in principal cities. B. C. AMES CO. 33 Ames Street Waltham 54, Mass.

Mfgr. of Micrometer Dial Gauges • Micrometer Dial Indicators

If you write maker identify as IEN - 2005

New improved KIMWIPES



KIMWIPES*— industry's favorite disposable wipes — now better than ever

Here are the *new* Kimwipes — now improved to meet your wiping needs to a "T"! Manufacturing advances make them even more lint-free, more efficient than ever before — and at a far lower price. They're in a new more *convenient* dispensing carton, too — it serves just *one* at a time! Get new Kimwipes today — for *every* industrial wiping and polishing job! Two convenient sizes, 15" x 18" and 5" x 9".

KIMWIPES INDUSTRIAL WIPING TISSUES

A Product of Kimberly-Clark

*T. M. REG. U. S. PAT. OFF.

Send for sample and information today

Kimberly-Clark Corporation
Neenah, Wisconsin

Please send me a sample of the new improved Kimwipes

Name.....

Firm.....

Address.....

City..... Zone..... State.....

NEW LITERATURE—Continued

If you write maker identify as IEN - 0136

HOISTS . . Hand chain hoist rates ½ to 2 ton in three models, weighs 38 to 52 lb., has 21 to 64 ft. of chain overhaul to lift one foot. Bulletin CH, 4 pages. Coffing Hoist Co., 802 Walter St., Dept. IEN, Danville, Ill.

If you write maker identify as IEN - 0137

FLEXIBLE METAL HOSE . . Corrugated, convoluted, stainless-steel, braid-reinforced types. 36-page Catalog 130-R has sizes, ratings, fittings. Flexonics Corp., 1333 S. Third Ave., Dept. IEN, Maywood, Ill.

If you write maker identify as IEN - 0138

INSULATING . . Thermal, refractory and electrical materials, also packings, roofing, flooring, partitions, friction materials. Catalog IP-6A, 40 pages. Johns-Manville, 22 E. 40th St., Dept. IEN, New York 16, N. Y.

If you write maker identify as IEN - 0139

MANAGEMENT . . Food service experts are prepared to take over all responsibilities of feeding your personnel. How they do it, importance of eye appeal, typical menus, are in 32-page "Any Way You Look," Industrial Food-Crafts Inc., 125 Broad St., Dept. IEN, Elizabeth, N. J.

If you write maker identify as IEN - 0140

METAL STRIP . . Aluminum to zirconium is rolled to your order to .0005 in. in thickness, to .0001 in. in tolerance. Beryllium copper and clad metals are included in the list. Details in 6-page folder. American Silver Co., 36-09 Prince St., Dept. IEN, Flushing 54, N. Y.

If you write maker identify as IEN - 0141

MILLING CUTTERS . . Kroslok design has a cross serration pattern on cutter blade mates to achieve rigid holding. Bulletin 101-CT, 8 pages. Motch & Merryweather Machinery Co., 715 Penton Bldg., Dept. IEN, Cleveland 13, Ohio

If you write maker identify as IEN - 0142

PACKAGING . . Paper tissue for wrapping glass and metal parts, toys, soft goods. These and other uses in miniature 16-page folder, "Industry Turns to Tissues." Crystal Tissue Co., 10 S. Verity Parkway, Dept. IEN, Middletown, Ohio.

If you write maker identify as IEN - 0143

ELECTROSTATIC PAINTING . . Fan blades to garage doors is the scope of product applications on the company's high-potential grounded-work painting equipment shown in 8-page bulletin, "Ionic Gun." Scientific Electric, 107 Monroe St., Dept. IEN, Garfield, N. J.

If you write maker identify as IEN - 0144

PIPE . . Machine-welded pipe and tube and fittings in sizes to 48 in. is fabricated from stainless steel, nickel alloys, aluminum, titanium, other metals. Grades, finishes, sizes, weights, in 24-page Swepco catalog. Stainless Welded Products, Inc., 249-53 Cornelison Ave., Jersey City 2, N. J.

If you write maker identify as IEN - 0145

RUBBER PIPE . . Resistance to heat and oil is a feature of pipe, fittings and containers made of Buna-N hard synthetic rubber. Sizes in 4-page Folder E-202. Luzerne Rubber Co., Muirhead Ave., Dept. IEN, Trenton 7, N. J.

If you write maker identify as IEN - 0146

PLASTIC MATERIALS . . Condensed reference information on some 50 materials is given in 12-page Bulletin G-19. It covers molding and extrusion materials, wire and cable covering, bonding resins, protective coating resins, laminating plastics, rigid sheet, flexible film. Bakelite Co., 30 E. 42nd St., Dept. IEN, New York 17, N. Y.

If you write maker identify as IEN - 0147

FLUOROCARBON PLASTICS . . Who makes parts and finished products from the company's Kel-F fluorocarbon plastic is listed in 16-page "Buyers Guide." These makers are grouped by processors and by type of product. Name and address are given for each. M. W. Kellogg Co., Box 469, Dept. IEN, Jersey City 3, N. J.

If you write maker identify as IEN - 0148

HYDRAULIC PRESSES . . Air pressure from a shop line is converted into hydraulic pressure to power the company's 2½ and 5½-ton presses. 1954 Catalog, 12 pages, details these and index tables, conversion accumulators, impact hammers, other components for automatic operation. Air-Hydraulics, Inc., 218 Belden Road, Dept. IEN, Jackson, Mich.

If you write maker identify as IEN - 0149

PRINTING . . Dri-Stat transfer-process photocopy machine will make a duplicate copy in a little under a minute of typed, printed, written records and drawings to 12 in. in width. Folder, 6 pages. Peerless Photo Products Inc., 652 Tesla Road, Dept. IEN, Shoreham, N. Y.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 90

If you write maker identify as IEN - 2007

Control Costs!

Print the Weight with New TOLEDOS

New Toledo Printweigh Scales meet your needs today for *closer cost control!* Stop human errors in reading, remembering, recording . . . provide accurately printed weights with split-second speed . . . *accurately* recorded!

Printweighs are available for dial type scales in the great new line of Industrial Toledos! *44 new features* include . . . new clean-line design . . . double-pendulum mechanism in one-piece sector . . . lifetime fulcrum. Send for new condensed catalog No. 2001. Toledo Scale Co., Toledo 1, Ohio.

TOLEDO.
Headquarters for Scales

If you write maker identify as IEN - 2008

SALT BATH BRAZING

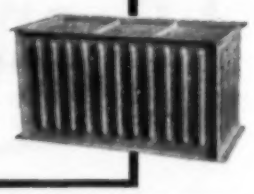
the fastest, cheapest production method

Maximum Production in Minimum Floor Space!

180 steel bicycle forks per hour copper brazed in an Ajax Salt Bath measuring only 4" x 36" x 24"! Quenched directly from brazing bath into water.

58 Aluminum Joints Brazed Simultaneously!

Aircraft cabin heater with 58 separate aluminum parts brazed in 10 min. Eliminated hand torch brazing requiring 7 hrs. per unit. Thin aluminum sheets are brazed to structural parts 10 times heavier without warping.

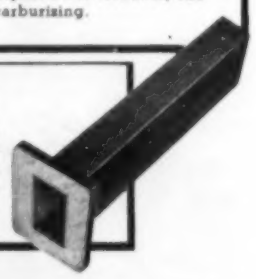


Brazing Cost: Nothing

Steel starter pedal brass brazed and carburized simultaneously in the same Ajax furnace with one heating. Former method required two furnaces, one for brazing, another for carburizing.

Rejects Reduced: 70% to Zero!

Brass electronic wave guide with stainless steel flange brazed with silver solder in Ajax Salt Bath at 1350°F. in 1½ minutes, then air cooled. Rejects reduced to 0 whereas with previous methods, rejects ran as high as 70%.



Work immersed in batches . . . 5, 20 or 100 assemblies in each batch.

All joints brazed simultaneously . . . in seconds rather than in minutes.

Decarburization of steel assemblies avoided . . . no reheating needed. Clean surfaces assured for subsequent processing.

No cooling chamber required . . . no hydrogen atmosphere. 75% less floor space!

Brazing AND hardening . . . can be done simultaneously in a single operation.

First cost of equipment lower . . . than any other production brazing system.

Let us braze a job batch of your parts in our Metallurgical Service Laboratory. See how much faster your work can be handled, how much your product can be improved. Write for details.

AJAX ELECTRIC COMPANY, INC.

The world's largest manufacturer of electric heat treating furnaces exclusively

900 Frankford Avenue
Philadelphia 23, Penna.

AJAX Trademark HULTGREN

ELECTRIC SALT BATH FURNACES

If you write maker identify as IEN - 2010

This torque tool leads a DOUBLE LIFE

FIRST it's a torque screw driver

THEN it's a torque wrench!

This scientifically accurate Apco torque tool does double duty. You can use it for driving screws where tension must be measured accurately. Then, remove the bit . . . substitute a socket, and presto — it becomes a vertical torque wrench that can be used to tighten nuts up to 100 inch pounds. Available in 13 size ranges — in inch grams; inch ounces; and inch pounds.

Here's your chance to save money . . . with two tools in one! This minutely accurate torque tool is made with the same care that characterizes all Apco Mossberg Torque Tools. Send for complete facts. Apco Mossberg Company, 171 Lamb Street, Attleboro, Mass.

APCO MOSSBERG COMPANY
ATTLEBORO, MASS.

If you write maker identify as IEN - 2011

IF YOU EMPLOY CARPENTERS AND USE NAILS — YOU CAN PROBABLY DO IT FASTER, BETTER, CHEAPER WITH A NAILING MACHINE . . .

USE AN

fmc ALL PURPOSE INDUSTRIAL NAILER

THIS MECHANICAL NAILING MACHINE HANDLES EVERY PRODUCTION ITEM FROM BED FRAMES TO PALLETS AND GRAIN DOORS

You can cut nailing costs with mass production techniques. Modern nailing machine design eliminates the need for large production runs. Versatile operation permits even a small run to be handled with pay-for-itself economy. We can adapt a nailing machine to suit your product.

A TIME-SAVING DEVICE THAT WILL PAY DIVIDENDS THRU GREATER PRODUCTION

Driving multiple nails per stroke in a variety of nailing patterns outclasses any hammer-in-hand production. Uniform quality eliminates rejects — increases output.

HOW THE MACHINE IS MADE

Welded steel construction provides lasting hard use. Year after year performance with minimum maintenance.

SIZES AVAILABLE

Standard models select and drive up to 24 nails per stroke. Available in 48", 66" or 80" widths. Special custom adaptations are available on order.

HERE'S WHERE IT IS NOW APPLIED

Successfully adapted to nail pallets, shipping crates, redwood outdoor lawn furniture, cooling tower panels, bed spring frames, grain doors and many other wood products.

Available FROM fmc FOOD MACHINERY AND CHEMICAL CORPORATION

TRADE MARK

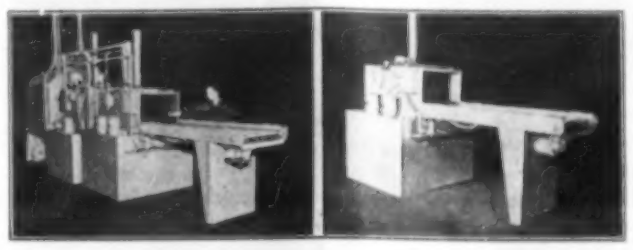
FOOD MACHINERY AND CHEMICAL CORPORATION
PACKING EQUIPMENT DIVISION, RIVERSIDE, CALIFORNIA

WRITE FOR FREE LITERATURE!

If you write maker identify as IEN - 2013

HEAT TREATING . . Brine quench to operate in sequence with furnace

Source: IPSEN INDUSTRIES INC.
710 S. Main St., Rockford, Ill.



Capacities are 300, 400, 700 lb. per hour

Automatic action characterizes this new electric pneumatic quench equipment. It has been designed to apply about 8 in. back of the Model-T Ipsen furnace to take work from the furnace, lower it into the quench liquid, raise it and move it to the unloading table that extends from the tank housing.

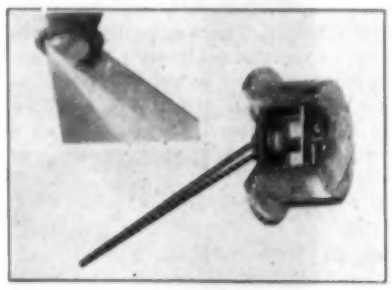
The new unit goes into operation immediately upon completion of the furnace heating cycle. Chain driven rods move into the furnace quench zone as soon as the intermediate door of the furnace closes and the rear door opens. Cams actuate the rod arms to pull the work and its tray to the brine tank where the two are immersed by means of a pneumatic elevator. This elevator returns to "up" position, after a predetermined interval, and the work and tray are removed manually to unloading position.

The brine is maintained at correct temperature by finned cooling coils carrying water from a shop connection under control of Partlow thermostatic equipment. Four motor driven propellers maintain circulation over the cooling coils as soon as a loaded rack enters the liquid. If an oil quench or atmosphere cooling has been preselected, instead of the brine quench, the work remains in the furnace quench zone for these periods and then is removed for unloading without immersion in the brine.

If you write maker identify as IEN - 2014

CONTROL . . Lever operated switch to regulate materials flow in a bin

Source: SCRAYCO
201 Greene Ave., Dept. IEN, Bound Brook, N. J.



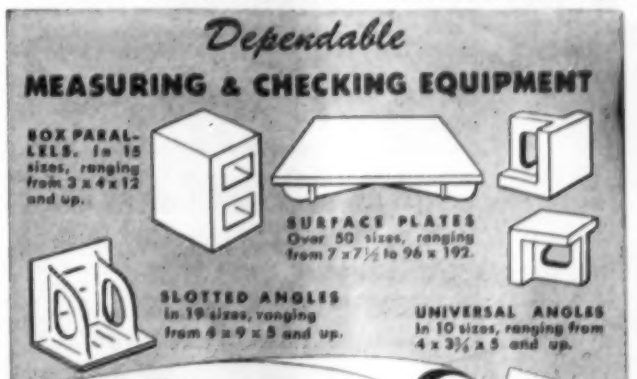
For dry materials

Stainless steel lever or finger extends at a downward angle from a rubber sphere in the housing of this new materials level control. The inner end is restrained by a spring to hold the outer end at rest. When the outer end is moved downward, against the spring action due to the weight of materials reaching it, the switch contacts are opened so the switch circuit shuts off the flow. The contacts remain clean inside the housing since the rubber sphere seals them out. The only parts exposed to the materials being controlled are one side of the sphere and the steel lever. It is round in section so nothing can accumulate on it.

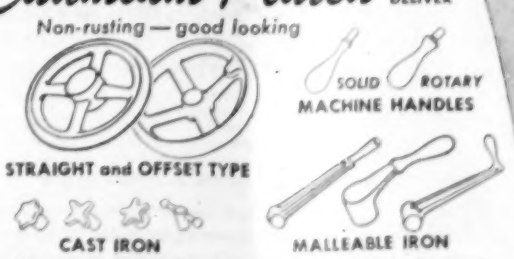
All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 86

If you write maker identify as IEN - 2015

Dependable
MEASURING & CHECKING EQUIPMENT



and Now
HAND WHEELS, KNOBS, HANDLES
Cadmium Plated READY TO DELIVER
Non-rusting — good looking



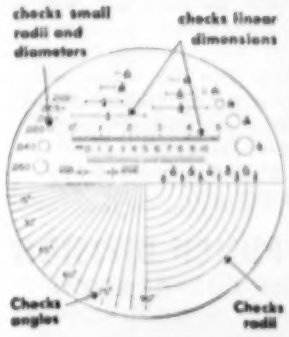
Send for Complete Catalog

We also build jigs, fixtures, special tools and machinery. Send us your blueprints.

MACHINE PRODUCTS CORPORATION
6771 E. McNichols Rd. Dept. F Detroit 12, Mich.

If you write maker identify as IEN - 2016

THE Original BELL & HOWELL
Pocket Comparator



Saves time and money inspecting small dimensions

● Here's *guaranteed* accuracy in checking small dimensions at a price any business can easily afford. Save time and money measuring wear on cutting tools, checking forms and dimensions of punches, dies and gauges—as well as chamfers, threads and small holes on production parts.

Thousands in use by America's leading precision manufacturers. It's the greatest time-saver since the micrometer!

price only $36.00 order today

A product of BELL & HOWELL CO. Distributed by
See Your National Tool Co. Representative or Local Jobber
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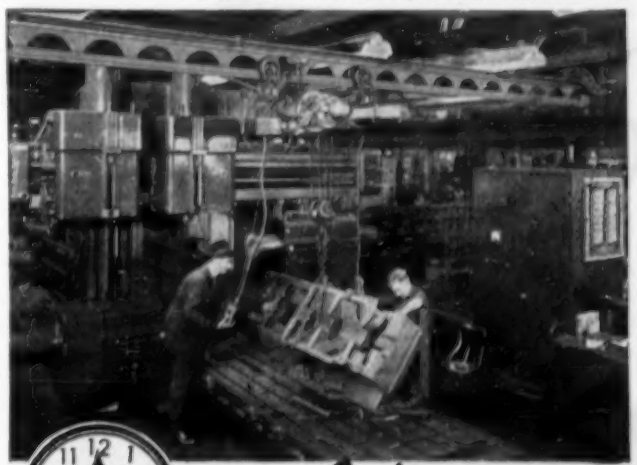
11220 Madison Avenue Cleveland 2, Ohio

Write for FREE descriptive folder

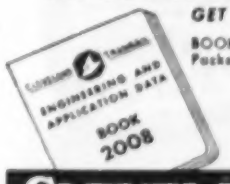
If you write maker identify as IEN - 2017



ONE *Extra* HOUR OF PRODUCTION DAILY

Many shops are getting an extra hour of production and more out of their machine tools by use of simple inexpensive overhead tramrail cranes that reduce the time to load and unload the machines. If you want greater machine productivity, check with Cleveland Tramrail.

GET THIS BOOK!
BOOKLET No. 2008 Packed with valuable data.



CLEVELAND TRAMRAIL DIVISION
THE CLEVELAND CRANE & ENGINEERING CO.
4208 East 285th St., Wickliffe, O.

CLEVELAND TRAMRAIL

If you write maker identify as IEN - 2018

UNIT 357 MOBILE CRANE

• Self-Propelled
• Rides on Rubber
• Has 1001 Uses

Speed Up Material Handling

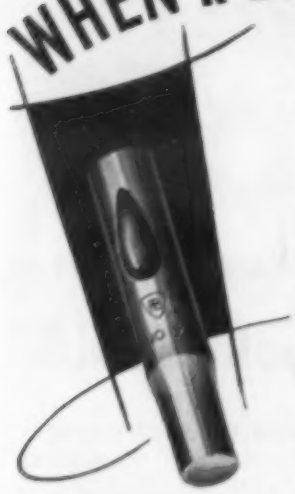
Here's a handy, mobile crane for lifting or loading jobs around your plant. Ideal for dismantling, moving or erecting machinery . . . loading and unloading structural iron, pipe, bars, lumber and equipment of all types. The UNIT 357 is self-propelled . . . rides on rubber at road travel speed . . . is easy to maneuver even in cramped yard conditions. Operated by ONE man . . . powered by ONE engine . . . swings in a 360° circle. Full vision cab gives complete visibility. Promotes Safety. Write for Catalog.

UNIT CRANE & SHOVEL CORP.
6605 W. Burnham Street, Milwaukee 14, Wis., U. S. A.

UNIT
CRANES • CLAMSHELLS • MAGNETS

If you write maker identify as IEN - 2019

WHEN R-B Punches Are Used



What are your piercing or forming requirements—standard or unusual shapes—small or large holes—steel or special alloys — thin or thick metals? There is either an R-B punch in standard shapes and sizes or R-B will manufacture special punches, die buttons and retainers to your specifications that will provide more efficient piercing operations.

Many hole-making applications, formerly requiring drilling or some other costly means, can now be done with R-B interchangeable punches. If you have thought your piercing jobs too tough for interchangeable punches, it will pay you to investigate the wide application potential of R-B standardized equipment.

R-B Engineering Service Is Available for Your Tough Piercing Problems.

RICHARD BROTHERS PUNCH DIVISION
ALLIED PRODUCTS CORPORATION
DEPT. 73 • 12615 BURT ROAD • DETROIT 23, MICHIGAN

Also Produced in OTHER ALLIED PLANTS
SPECIAL COLD FORGED PARTS • STANDARD CAP SCREWS
PRECISION GROUND PARTS • SHEET METAL DIES MADE OF FERROUS ALLOYS, ZINC ALLOYS OR PLASTICS

If you write maker identify as IEN - 2020

New!

CROWN FOUNTAIN PEN for Design Layout Ink

Flows Ink Exactly Where You Want It — EVEN ON SMALLEST WORK AREAS!
Prevents Soiling of Fingers and Work

Newest, handiest way to apply design layout ink in small areas. Obsoletes use of brushes! Crown pen lays ink on in smooth, sharp edged strokes. Precision type valve controls flow of ink to felt tip — no waste or spilling! Pen holds over one ounce of ink — can be used on any surface.

SPECIAL INTRODUCTORY OFFER! For limited time only ONE CROWN LAYOUT INK PEN, complete with 1 pointed tip and 3 ½" chisel tips and 1 pint of CROWN Layout Ink in pour spout can.
ALL FOR $5.60 (Regular $6.60 Value)

New! CROWN BULK Design Layout Ink
now available in 8 oz., pint or quart pour-spout cans or in gallons. Dark blue.

A SUPER QUALITY INK to give you best results with any method of application. THE ONLY INK THAT CAN BE USED IN CROWN LAYOUT INK PENS!

8 oz. $1.00 Quart $2.50
Pint $1.65 Gallon $8.75

CROWN "Spray-On" Design Layout Ink

Just press the trigger on the can! Easiest, fastest way to apply design layout ink on most jobs. Dark blue, non-glare, easily scribed surface. Thousands of satisfied users!

$1.50 per 12 oz. can (without Spray Head)
15% discount on cases of 12 cans
Spray Heads, Each 15c Extra

ALL PRICES F.O.B. WOODSTOCK, ILLINOIS — SUBJECT TO CHANGE WITHOUT NOTICE — STATE OR LOCAL SALES TAX EXTRA

ORDERS SHIPPED SAME DAY RECEIVED

CROWN INDUSTRIAL PRODUCTS COMPANY
715 Amsterdam St., Woodstock, Illinois

Please ship us the CROWN products indicated below:

ITEM	QUANTITY
Introductory Kit — Pen, 3 Extra Tips and 1 Pint Ink.	
Bulk Design Layout Ink.	8 oz. ____ Pint ____ Quart ____ Gal.
"Spray-On" Design Layout Ink — 12 oz. Pressure Can	
Spray Heads for Pressure Can	

☐ Check enclosed $____ ☐ Our Purchase Order No. ____

COMPANY ____
ADDRESS ____
CITY ____ ZONE ____ STATE ____

Authorized Signature

NEW LITERATURE—Continued

If you write maker identify as IEN - 0150

PROCESSING . . High-vacuum equipment including furnaces, coating units, diffusion and other pumps, leak detectors, manifolds, valves, gages, traps. List prices of standard components in 12-page Price List. Consolidated Vacuum Corp., 761 W. Ridge Road, Dept. IEN, Rochester 3, N. Y.

If you write maker identify as IEN - 0151

PROCESSING . . Gum Karaya is a water-soluble material that forms a colloidal dispersion or a gel. Information on this and other properties, grades, processing and use are described in 8-page Bulletin G-102. Morningstar, Nicol, Inc., 1770 Canalport Ave., Dept. IEN, Chicago 16, Ill.

If you write maker identify as IEN - 0152

PROTECTING . . Folding shelters for loading docks are made of canvas. They protect workers and materials, minimize heat loss. Wall-type curtains of canvas act to partition off departments or activities. Both are described in 20-page pocket booklet, "Your Guide." Atlas Industries, 1300 W. Washington Blvd., Dept. IEN, Chicago 7, Ill.

If you write maker identify as IEN - 0153

CENTRIFUGAL PUMPS . . Theory and practice are detailed in 12-page Catalog 253-D to assist in selection and application. Points to watch for in suction and discharge lines, friction loss tables, viscosity charts, how to calculate head, are included. Tri-Clover Machine Co., 2809 60th St., Dept. IEN, Kenosha, Wis.

If you write maker identify as IEN - 0154

VACUUM PUMPS . . Diffusion and mechanical types, also manifolds, glass-working torches, burners, valves, accessories. Catalog 13-K, 114 pages. Research Vacuum Supply Co., 3434 Montrose Ave., Dept. IEN, Chicago 18, Ill.

If you write maker identify as IEN - 0155

OPTICAL PYROMETER . . Self-contained portable instrument is of optical-wedge design. Catalog 85, 8 pages, gives operating instructions, standard ranges and a schematic sectional view. Pyrometer Instrument Co., 92 Portland Ave., Dept. IEN, Bergenfield 21, N. J.

If you write maker identify as IEN - 0156

PYROMETER ACCESSORIES . . Thermocouples in base and precious-metal types including the company's Pyod concentric unit, also wells, protection tubes, wire. Ten installation methods are shown in 36-page Bulletin 235-5. Foxboro Co., 42 Neponset Ave., Dept. IEN, Foxboro, Mass.

If you write maker identify as IEN - 0157

SELENIUM RECTIFIERS . . 80-page revised handbook includes application circuit diagrams from relay power supplies to television transmitters, data on 26 models and basic circuits, servicing information and a trouble shooting chart. List price, 50 cents. Federal Telephone & Radio, 102 Kingsland, Dept. IEN, Clifton, N. J.

If you write maker identify as IEN - 0158

SPEED REDUCERS . . Planetary-gear in-line reduction units have standard ratios from 4.3 to 1 down to 106 to 1. Single, compound or double types. Gears are helical. Catalog P-53, 16 pages. Philadelphia Gear Works, Erie Ave. & G St., Dept. IEN, Philadelphia 3, Pa.

If you write maker identify as IEN - 0159

RELAYS . . New source of supply for industrial-type relays is offered by a manufacturer of marine signal equipment since 1919. File folder, "Relays," 4 pages. Henschel Corp., 14 Cedar St., Dept. IEN, Amesbury, Mass.

If you write maker identify as IEN - 0160

RELAYS . . Stock units of many makes for immediate delivery are listed by rating, maker's number and list price in 16-page 1954-C5 catalog. Telephone type, sealed, midget, contactor, keying units are included. Relay Sales, 4721 W. Madison St., Dept. IEN, Chicago 44, Ill.

If you write maker identify as IEN - 0161

MACHINE ROLLS . . Made of metal, wood, rubber and plastic for textile, paper and other process application. Catalog 48, 48 pages, has an additional 12 pages of dimension sheets to serve as inquiry forms. Rodney Hunt Machine Co., 12 Maple St., Dept. IEN, Orange, Mass.

If you write maker identify as IEN - 0162

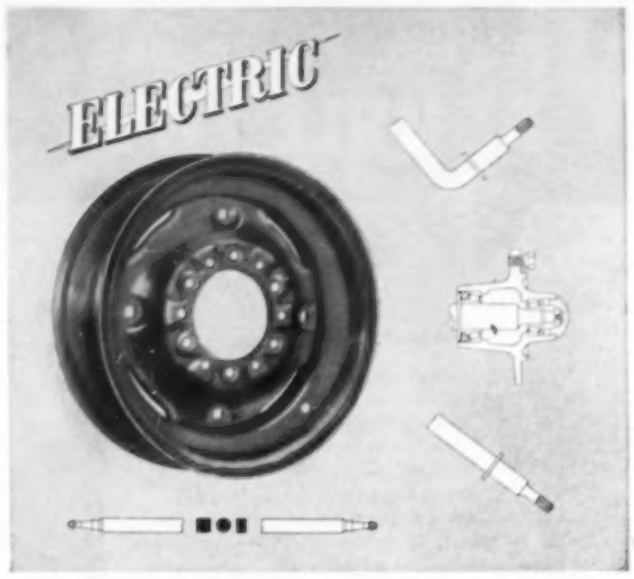
TAPPING SCREWS . . Seven types are for service in sheet metal, castings, plastics, plywood, other materials. Recommendations in 8-page Bulletin TL-88. Townsend Co., 49 Industrial St., Dept. IEN, New Brighton, Pa.

If you write maker identify as IEN - 0163

SEALING . . 80-page instruction book tells how to apply vapor-seal materials over low-temperature insulation, particularly for chemical process work. "Vapor and Weather Barriers," letterhead request. Insul-Mastic Corp., 1141 Oliver Bldg., Dept. IEN, Pittsburgh 22, Pa.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 2022



A Wheel for Every Job!

Our engineers will recommend the most efficient and economical wheel and axle assembly for your unit. We invite your inquiries.

WRITE US FOR CATALOG
ELECTRIC WHEEL CO.
2800 SPRUCE, QUINCY, ILLINOIS

If you write maker identify as IEN - 2023

SHENANGO Centrifugal CASTINGS ... KEY TO SAVINGS

Basket centrifuge cylinders centrifugally cast in Monel Metal by Shenango. Used in superdehydrators for separating crystals given off from vacuum crystallizers.

3 REASONS WHY

SHENANGO parts give longer, more dependable service

1. The centrifugal casting process used by Shenango guarantees higher strength, pressure-dense castings free from sand inclusions, blowholes and other defects.
2. You specify the job and Shenango will supply the part cast in the exact metal formula for maximum service under your specific conditions.
3. Precision machining is done by skilled craftsmen in Shenango's modern machine shop for a perfect fit at minimum cost.

Send for Bulletin No. 150 covering nonferrous parts; Bulletin No. 151 covering Meehanite Metal, Ni-Resist and special iron alloys.

SHENANGO-PENN MOLD COMPANY
Centrifugal Castings Division
Dover, Ohio
Executive Offices: Pittsburgh, Pa.

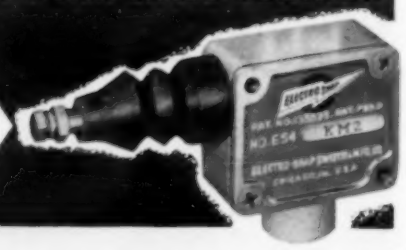
SHENANGO
ALL RED BRONZES • MANGANESE BRONZES • ALUMINUM BRONZES
MONEL METAL • NI-RESIST • MEEHANITE METAL

If you write maker identify as IEN - 2024

ELECTRO SNAP

ONE WAY
IMPULSE SWITCH
FOR SIMPLIFIED CONTROL

EXCLUSIVE ACTUATOR LETS YOU DO THINGS YOU NEVER COULD BEFORE!



Model ES4-KM2

- **Eliminates Interlocking Switches and Complicated Actuating Dogs—** Ideal for pulsing solenoid valves, air-hydraulic cylinders.
- **Gives More Dependable Operation—** Replaces complicated controls.
- **Lowers Cost of Controls Circuits—** Fewer switches, etc., required.
- **Faster Automatic Operation—** Closer sequencing possible.

Switch rated at 10 amps, 125/250 v. AC. Four models available with overtravel and pulsing strokes from 1/16" to ⅜". Write for Data Sheet **ESK-2.**

see our catalog in $ PRODUCT DESIGN FILE or write for copy

ELECTRO-SNAP SWITCH AND MFG. CO.
4224 West Lake Street, Chicago 24, Illinois

If you write maker identify as **IEN - 2025**

Not on Your Payroll...But He's Working for You!

YOUR BLUE DEVIL SOCKET SCREW DISTRIBUTOR

CAP SCREWS

STRIPPER BOLTS

FLAT HEAD CAP SCREWS

PIPE PLUGS

SET SCREWS

The Industrial Distributor in your area who stocks Blue Devil Socket Screws is working for you just as surely as if he was punching your time clock!

By maintaining an adequate and properly balanced inventory of these precision made products at all times, he makes sure you get them when you need them—in the exact sizes, styles and quantities you require.

Remember your Blue Devil Distributor next time you need socket head products; you'll be mighty glad you did!

Actual cross-section diagram shows how cold forming of Blue Devil socket head insures unimpaired fiber continuity.

SOCKET SCREWS EXCLUSIVELY!

SAFETY SOCKET SCREW COMPANY
6508 Avondale Avenue, Chicago 31, Illinois

SOLD ONLY THROUGH AUTHORIZED DISTRIBUTORS

If you write maker identify as **IEN - 2026**

DEPENDABLE! ECONOMICAL! POWERFUL!

Model 300

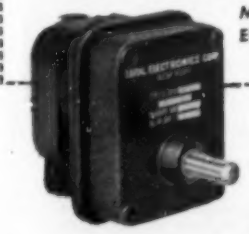
SUB-FRACTIONAL GEARED MOTOR

features

- **Porous Bronze Bearings** and **Large Oil Reservoirs** for assured lubrication.
- **Fan** for cool operation, standard on all **LORAL** units and an aid to meeting U/L approval in high temperature applications.
- **Molded Nylon Gears** in the high speed end of the gear train for quiet operation.
- **Paper Layer Coils,** vacuum-impregnated for operation under maximum temperature and humidity conditions.
- **Interchangeable**—mountings to fit your application.
- **Speeds**—from 1 RPM and up to meet your specifications.

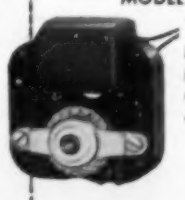
Recommended for use in ROTISSERIES, VENDING MECHANISMS, ROTARY DISPLAY UNITS, ACTUATING DEVICES, DISPENSERS, etc.

Other Types Available are the:



MODEL 800—DELUXE SPUR-GEAR ENCLOSED SPEED REDUCER

Compact, powerful, sealed oil reservoir, fan cooled. Output torque 45 in. lbs. at 2 RPM. Input 30 watts.



MODEL 400—BASIC MOTOR

1/200th horsepower, 2 pole induction unit. Output torque 1.5 in. ounces at 3000 RPM. 115 volts, 60 cycles.

LORAL
Imprint of Integrity

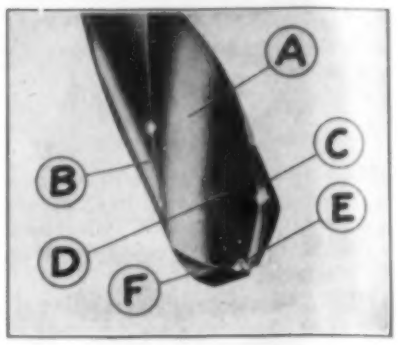
• **Send for descriptive literature:**

LORAL ELECTRONICS CORPORATION
794 EAST 140th STREET · NEW YORK 54, N. Y.

If you write maker identify as **IEN - 2028**

DRILLING . . Carbide tipped tool in fractional, wire and letter sizes

Source: SUPER TOOL CO.
21650 Hoover Road, Dept. IEN, Detroit 13, Mich.



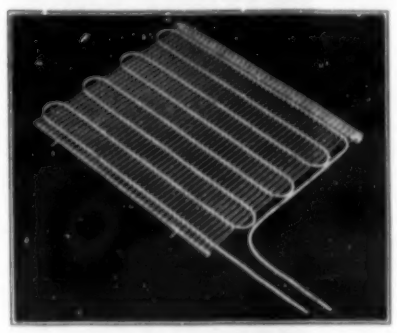
Precision design

Polished flutes and heavy web A combine with a heavy land B in the stainless steel body of this new twist drill to back up the carbide tip C. The tip blends into the spiral at D. It is ground to thin the point to minimize cutting pressure at E. Radial relief is ground back of the tip lip at F. Feeds have been obtained in cast iron to 8 ipm. with the new drill.

If you write maker identify as **IEN - 2029**

REFRIGERATING . . Evaporator shelf for installation in upright freezer

Source: UNION STEEL PRODUCTS CO.
405 Pine St., Dept. IEN, Albion, Mich.



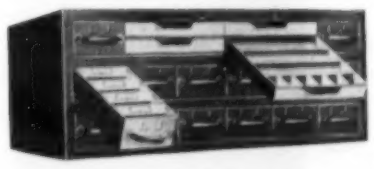
Built to order

Steel tube coil is assembled in an electrically welded steel wire structure in this new evaporator shelf. The coil lies in protected position. Its surfaces are clear of surrounding metal for free conduction and convection. The new assembly is available in specified size, capacity, shape and finish.

If you write maker identify as **IEN - 2030**

STORING . . Small parts cabinet in combination drawer assemblies

Source: AURORA EQUIPMENT CO.
422 Cleveland Ave., Dept. IEN, Aurora, Ill.



For small and tiny parts

Six combinations have been added to the company's small parts cabinets, previously described IEN-4682-53. They provide assemblies with drawers measuring 5⅝ by 11 by 3⅛ in. and 11 by 11 by 1¼ inches. Any two of the former size are interchangeable with any two of the latter.

The 11 by 11-in. drawer can be divided into 28 separate compartments to hold tiny parts. Dividers also are available for the 5⅝ by 11-in. units. The cabinet can be ordered in assemblies of 8 to 108 drawers over the expanded line.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as **IEN - 2031**

How to Cut Cleaning Costs with WASTE RECEPTACLES

IN YOUR PLANT

Everybody is automatically a member of your cleaning department by conveniently placing Bennett Bilt Waste Receptacles to invite their use. These waste receptacles are sanitary, economical and a major help to cleanliness and neatness. Put them to work for you and reduce cleaning costs.

BENNETT

WASTE RECEPTACLES

HAVE ALL THESE FEATURES

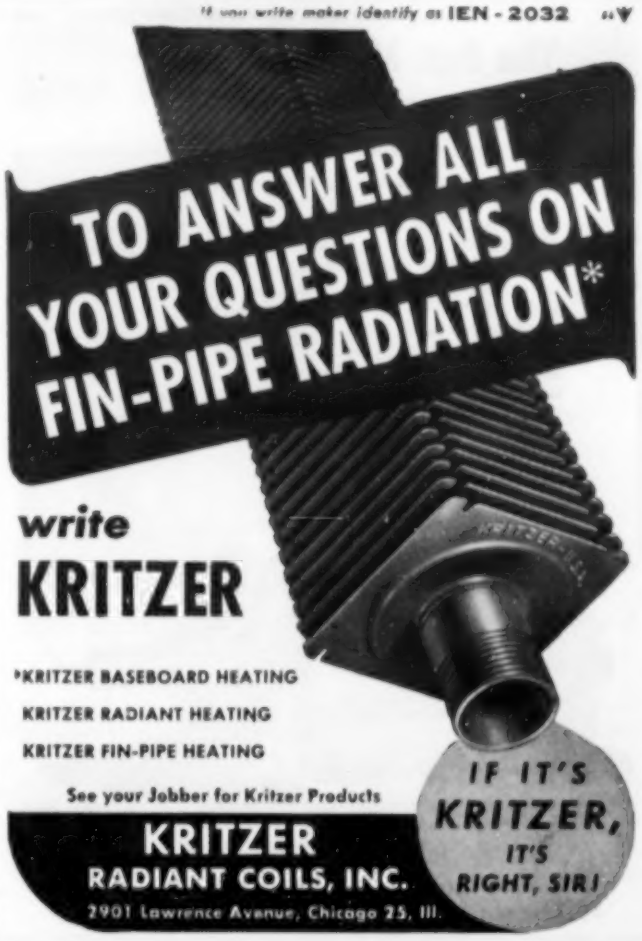
- Non-rusting stainless steel feet eliminate rusting and rust marks
- Made of extra heavy-gauge corrosion resistant steel
- All welded construction
- Smooth exterior surface . . . nothing to catch and tear clothes
- Reinforced corners
- Self-closing mechanism assures closed doors when not in use and permits easy opening of independent doors with finger-tip pressure
- Rounded corners for structural strength and pleasing appearance
- Baked enamel finish . . . white or green

• These are a few of the many features that make Bennett Bilt Waste Receptacles a natural "buy".

THE BENNETT MANUFACTURING COMPANY
ALDEN, N. Y.

If you write maker identify as **IEN - 2032**

TO ANSWER ALL YOUR QUESTIONS ON FIN-PIPE RADIATION*



write

KRITZER

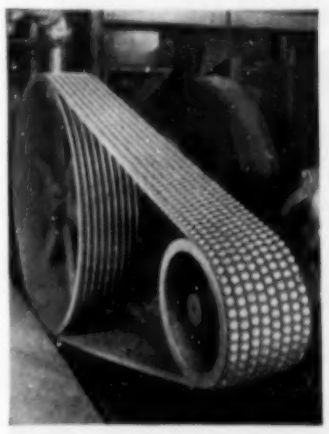
*KRITZER BASEBOARD HEATING
KRITZER RADIANT HEATING
KRITZER FIN-PIPE HEATING

See your Jobber for Kritzer Products

KRITZER RADIANT COILS, INC.
2901 Lawrence Avenue, Chicago 25, Ill.

IF IT'S KRITZER, IT'S RIGHT, SIR!

If you write maker identify as **IEN - 2033**



New VEELOS TD and TE Adjustable V-belts for D and E Drives

. . . easier to couple and uncouple
. . . longer lasting

THIS new Veelos is *installed quickly* without removing the outboard bearings found on most D and E drives. It is the easiest V-belt to couple and uncouple ever developed. Cup-washers and T-screws join links together to form individual belts of any length. Veelos TD and TE *lasts longer.* New high-tensile strength links plus the new stud, cup-washer and T-screw design give *added strength*—combine this added strength with *maximum flexibility* for cooler, smoother running.

Veelos is known as Veelink outside the United States.

Get the complete story of this great new V-belt for D and E drives. Send for new 8-page illustrated catalog.

VEELOS THE LINE V-BELT

MANHEIM MANUFACTURING & BELTING CO.
651 Manheim St., Manheim, Pa.

Adjustable to Any Length • Adaptable to Any Drive

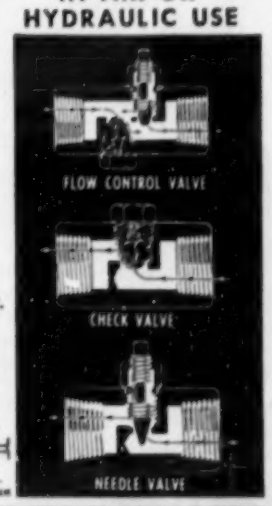
If you write maker identify as **IEN - 2034**

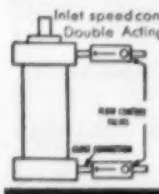
Get Easier, More Accurate Cylinder Speed Control with *Pneu-Trol* VALVES IN AIR OR HYDRAULIC USE

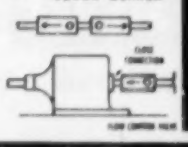
2000 and 5000 (steel) P.S.I.

Pneu-Trol Valves combine in a short, compact body, a tapered fine thread needle for extremely accurate air or oil flow control and a floating retro ball check, which permits full flow in the opposite direction. Retro ball floats in most sensitive position to seat, requiring only a slight differential pressure to fully open or close it. Check Valve and Needle Valve incorporate single function features of Flow Control Valve. All valves available in 6 female pipe sizes — ⅛" to ¾". Valve bodies are made from brass, aluminum, steel or stainless steel. Attractive Prices — Immediate Delivery.

Write for Illustrated Circular and Price List.







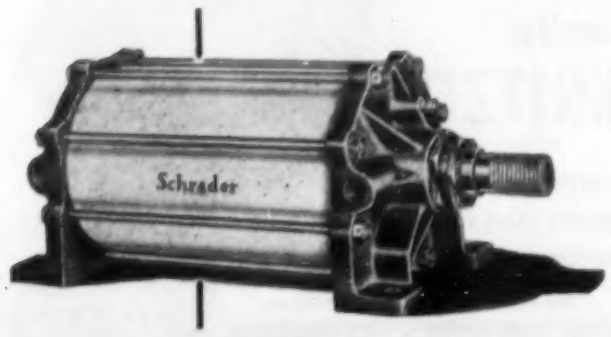
Pneu-Trol Devices, Inc.
1438 N. Keating Ave., Chicago 51, Ill.

If you write maker identify as IEN - 2035

The Best Muscles in Your Plant

This compact, powerful Schrader Air Cylinder can eliminate costly mechanical movements . . . tiring, slow manual labor . . . space wasting mechanisms in many spots on your production machines. Leg mounted cylinders, shown here, will deliver a powerful push, pull, or push and pull, parallel to the mounting surface.

Cylinder action can be controlled manually or automatically. Speed, force and cycle time are all readily controlled by Schrader operating valves and accessories. Schrader cylinders are available in any type of mounting up to 8 inch bore in any stroke. Full details are in the Schrader catalog. Write for it today.



A. SCHRADER'S SON
Division of Scovill Manufacturing Company, Incorporated
458 Vanderbilt Ave., Dept. D-34, Brooklyn 38, N. Y.

If you write maker identify as IEN - 2036

SAFE ARRIVAL—They used
WESTCOAT-CLEAR
TRANSPARENT Strip Coating

Shipments arrive at destination free from rust, corrosion, abrasion, contamination and tampering when *sealed in* WESTCOAT-CLEAR 202. It's the new quick-dip fast-setting coating that saves money, time and cuts costs. WESTCOAT's transparency makes all product identification easy . . . at all times . . . in all kinds of weather. It's extremely tough, gives positive protection; coated parts withstand 1,000 hours, 100° relative humidity at 100° F without rusting. Easy depreservation—slit coating, peel and part is ready for use. WESTCOAT is economical—remelt and reuse over and over.

Find out how WESTCOAT-CLEAR 202 can eliminate your packaging headaches—simplifies shipments and storage of spare parts, gauges and tools—saves time and money. Spend pennies and save dollars.

WESTERN COATING COMPANY
Eastern Plant—P. O. Box 227, Elyria, Ohio
Western Plant—85 West Union Street, Pasadena 1, California
Representatives in principal cities
PROTECT WITH
WESTCOAT

SEND COUPON TODAY FOR WESTERN COATING LITERATURE
NAME & COMPANY _____
ADDRESS _____
CITY _____ ZONE _____ STATE _____

NEW LITERATURE—Continued

If you write maker identify as IEN - 0164

SEALING . . Two types of materials for sealing porous castings are based on tough plastic and on metallic oxides. Application steps for each and examples of user reports are in 4-page "Imprex Process." Tincher Products Company, 814 Borden Ave., Dept. IEN, Sycamore, Ill.

If you write maker identify as IEN - 0165

MAGNETIC SEPARATOR . . Permanent-magnet design removes tramp iron from bulk material flowing in a hopper, spout or chute. "Permanent Magnets," 6 pages, tells about four types and where to use them. Prater Pulverizer Co., 1515 S. 55th Court, Dept. IEN, Chicago 50, Ill.

If you write maker identify as IEN - 0166

SHEARING . . Pivoted-blade design of the company's Steelweld power shear has a number of features that are detailed in 16-page Catalog 2011-E. 31 sizes range from 6 ft. by 10 gage to 12 ft. by 1 inch. Cleveland Crane & Engineering Co., 1137 E. 289th St., Wickliffe, Ohio

If you write maker identify as IEN - 0167

SOLDERING . . English-made electric soldering irons in straight and angle designs with ratings from 55 to 450 watts, also melting pots, electrically-heated ladles, branding irons. "Vicsol Appliances," 4 pages. Hess Co., 107 N. Water St., Dept. IEN, Rochester 4, N. Y.

If you write maker identify as IEN - 0168

STAMPINGS . . Short-run production is a specialty of the company. Drawings and cost figures on eight typical parts are in 4-page Bulletin 101. Federal Tool & Mfg. Co., 3640 Alabama Ave., Dept. IEN, Minneapolis 16, Minn.

If you write maker identify as IEN - 0169

STRAPPING . . 40th Anniversary booklet traces the development of steel strapping, shows a variety of present-day applications. Signode Steel Strapping Co., 2630 N. Western Ave., Dept. IEN, Chicago 47, Ill.

If you write maker identify as IEN - 0170

STUD DRIVER . . Pull the trigger of new Model-P Driver Tool and a cartridge explodes to drive a steel stud instantly into steel, concrete, masonry. Safety features and uses in 4-page Bulletin 1401-2. Velocity-Power Tool Co., 7500 Thomas Blvd., Dept. IEN, Pittsburgh 8, Pa.

If you write maker identify as IEN - 0171

SURPLUS . . Electronic components such as dynamotors, filters, fuses, lamps, rectifiers, shock mounts, tube sockets, vibrators. 1954 Catalog C-12, 20 pages, gives maker's name, rating, list prices. Wells Sales Inc., 833 W. Chicago Ave., Dept. IEN, Chicago 22, Ill.

If you write maker identify as IEN - 0172

INDUSTRIAL TELEVISION . . Closed-circuit unit enables you to observe remote instruments, dangerous processes, plant entrances, instructor demonstrations. Folder 2R-8812, 6 pages, on the "TV Eye." Radio Corp. of America, 1941 Front & Cooper Sts., Dept. IEN, Camden 2, N. J.

If you write maker identify as IEN - 0173

GASOLINE TESTING . . Polarographic analyzer for tetraethyl lead in gasoline is a pushbutton instrument. How it works is in 7-sheet Bulletin FS-235. Fisher Scientific Co., 719 Forbes St., Dept. IEN, Pittsburgh 19, Pa.

If you write maker identify as IEN - 0174

RESISTANCE TESTING . . Eight portable instruments to measure resistance of man-made grounds, of soil, of electric circuits. Schematic wiring diagrams and instructions in 8-page Vibroground Bulletin 1-1. Associated Research Inc., 8762 W. Belmont Ave., Chicago 18, Ill.

If you write maker identify as IEN - 0175

THREADING TOOLS . . Taps and dies for the instrument maker and toolmaker, also twist drills, fine-thread screws and nuts down to No. 00-96 size. List prices, thread and tap-drill data in 8-page pocket folder. J. I. Morris Co., 295 Elm St., Dept. IEN, Southbridge, Mass.

If you write maker identify as IEN - 0176

TIMING . . Time-delay element of the Agastat relay employs a self-contained air supply that is recirculated inside a dustproof head. Solenoid-actuated design in 4-page Bulletin SR-3. AGA Div., Elastic Stop Nut Corp., 1027 Newark Ave., Dept. IEN, Elizabeth, N. J.

If you write maker identify as IEN - 0177

TIMING . . Minerva Swiss-made stopwatches have a coil-spring mechanism guaranteed against breakage or wear. Details and models are shown with list prices in 12-page "Precision Timing Instruments." Herman H. Sticht & Co., 27 Park Place, Dept. IEN, New York 7, N. Y.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 90

If you write maker identify as IEN - 2038

New Grinnell
GAS-FIRED UNIT HEATERS

AUTOMATIC! EFFICIENT!

Assure Years of Dependable Service

Grinnell gas-fired unit heaters are easy to install, simple to operate and maintain. Efficient performance assured—with any type of gas—by modern design of burners and heat exchanger, proper motor and fan unit.

Automatic safety pilot operates to shut off main gas supply if pilot burner goes out.

Flashback and extinction noise prevented by the burner's raised port design and proper port size for the gas used. Low speed motors have built-in thermal overload protection and automatic reset. Available in 7 sizes — with input ratings from 25,000 to 200,000 Btu's. Write for catalog.

GRINNELL
UNIT HEATERS FOR STEAM, HOT WATER, GAS
GRINNELL COMPANY, INC.
Executive Offices: Providence, Rhode Island
Sales Offices and Warehouses in Principal Cities

If you write maker identify as IEN - 2039

DESIGNING A NEW PRODUCT?
send for
free booklet
with "*How-to-use*" data on
MASONITE PRESDWOOD

Here's help for harassed industrial designers. Fact-filled, illustrated booklet tells how and where Masonite Presdwood® adds strength, durability and sales appeal to products in scores of fields. These strong, grainless, all-wood hardboard panels are 28 ways better . . . you can even bend them permanently. Come in 44 types and thicknesses. Send for your copy of "A Guide for Product Designers" today. No obligation.

PRESDWOOD WOOD MADE BETTER

NATURALLY STRONGER WITH LIGNIN
MASONITE® CORPORATION
DEPT. IEN-2, BOX 777, CHICAGO 90, ILL.
"Masonite" signifies that Masonite Corporation is the source of the product

If you write maker identify as IEN - 2040

Specify **MEYERCORD DECAL** *Transfers*

—for difficult highly-specialized applications

—for long day-after-day production runs—

Meyercord Laboratory and Production Experience —PLUS Unexcelled Service—to Serve You *Better!*

Sometimes we are too prone to tell our friends about the spectacular achievements of Meyercord in solving those "impossible" decal transfer applications . . . like the new E-51 aircraft decals that resist up to 900 degree temperatures of jet engines, as well as the ravages of strong solvents and aircraft fuels. Specialized decal applications are a mighty important part of our business . . . but we're still first and foremost in the business of supplying standard Meyercord nameplate and identification decals. Whether you make typewriters, appliances, electrical conduit . . . any product that is turned out on long-time production runs, be sure to investigate the advantages of Meyercord decal transfer *uniformity, fine quality and absolutely unbeatable service* on your production line.

Send for This Manual of MEYERCORD DECAL NAMEPLATES

Shows hundreds of uses for durable, washable decal nameplates . . . as trademarks, instruction charts or diagrams—in any size, colors, or design. This manual is FREE...request it on your business letterhead, please.

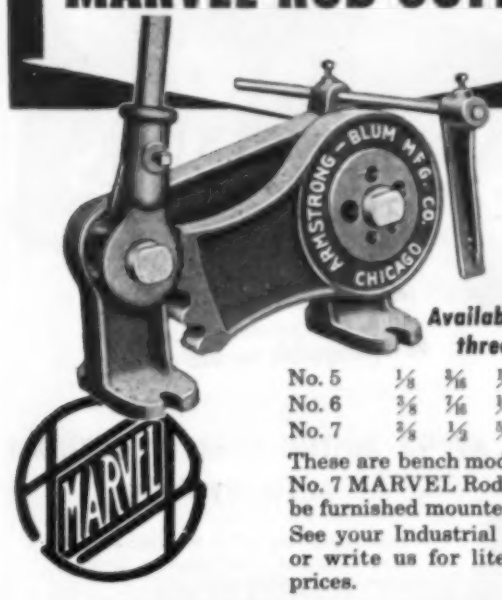
THE MEYERCORD CO.
World's Largest Decalcomania Manufacturers
DEPT. P-515
5323 WEST LAKE ST.,
CHICAGO 44, ILLINOIS

If you write maker identify as IEN - 2041

Just a single stroke!...

CUTS ROUND RODS ⅛" to ⅞" on a

MARVEL ROD CUTTER



Available in three models:

No. 5	1/8	3/16	1/4	5/16	3/8
No. 6	3/8	7/16	1/2	9/16	5/8
No. 7	3/8	1/2	5/8	3/4	7/8

These are bench models, but the No. 7 MARVEL Rod Cutter can be furnished mounted on legs.

See your Industrial Distributor or write us for literature and prices.

ARMSTRONG-BLUM MFG. CO.

5700 W. Bloomingdale Ave. • Chicago 39, U.S.A.

Manufacturers of the outstanding MARVEL Metal Saws.

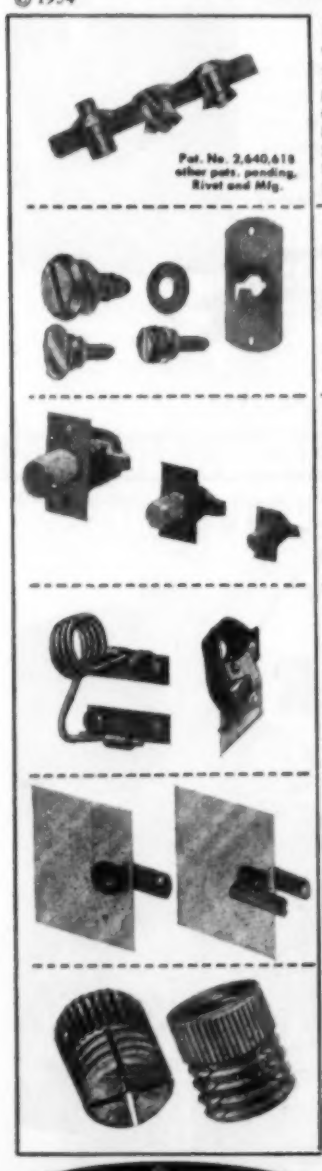
If you write maker identify as IEN - 2042

When do you specify

design fasteners?

When they lower production costs.
Southco Fasteners are designed for specific, requirements to reduce installation time, to do a better job.
Southco engineers are available to help you select the right fastener for your particular needs.
Write for the Southco Fastener Handbook.
Southco Division, South Chester Corporation, 1407 Finance Building, Phila. 2, Pa.

© 1954



DRIVE RIVETS . . . installed with only a hammer

Make riveting as easy as nailing; a one man job out of a two man operation. For blind or access applications. Fasten metal-to-metal or metal-to-wood. Installation is quick, easy. Just hit the rivet pin with a hammer.

Pat. No. 2,640,618 other pats. pending. Rivet and Mfg.

Wide-tolerance Quick-Release Fasteners

Ample length tolerance permits one size to cover wide variations in metal thickness and spacing. Floating screw assembly solves alignment problems. Easily installed.

DOOR FASTENERS . . . with adjustable grip

Accommodate variations up to 5/16 inch in engaging distance. Grip pressure adjusted by simply turning the knob. Pre-assembled unit is easily and quickly installed. Two head styles—flush or projecting.

DOOR SPRINGS . . . hold doors open and shut

Good for the life of the assembly. Holds doors both open and closed. Spring tension prevents rattle. Minimum space required. Available in coil or leaf springs.

DOOR LATCHES . . . installed in seconds

Low-cost, rugged, installed with unbelievable speed. Provide positive locking wherever used. Two types—handle or flush-head.

PERMANENT STEEL THREADS IN WOOD

Anchor nuts provide threads for metal screws, bolts, studs. Permit quick attachment or removal of parts. For wood laminates or composition materials; nothing projects to mar finished surfaces. Can't twist or pull out.

SOUTHCO

FASTENERS

PAWL • SCREW AND SPRING • DRIVE RIVETS
ANCHOR NUTS • ENGINEERED SPECIALTIES

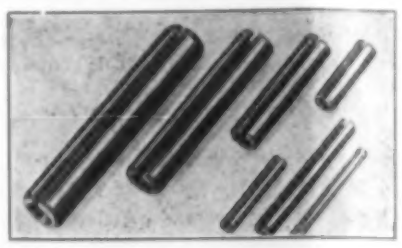
OFFICES IN PRINCIPAL CITIES

WHEREVER TWO OR MORE PARTS ARE FASTENED TOGETHER, STANDARD AND SPECIAL DESIGNS FOR IMPROVED PERFORMANCE AND LOWER PRODUCTION COSTS

If you write maker identify as IEN - 2044

FASTENING . . Split cylindrical pin to key, pin, bush equipment assemblies

Source: ELASTIC STOP NUT CORP.
2330 Vauxhall Road, Dept. IEN, Union, N. J.



Holds by spring action

Rollpins, previously described IEN-9248-50, are now available in corrosion resistant steel capable of withstanding a 100-hr. salt spray test. The new units are identified by their silver gray finish in contrast to the blue steel color of the regular heat treated carbon steel Rollpins for standard service.

Each unit is a slotted and chamfered cylindrical spring pin, heat treated for toughness, resilience and shear strength. Typical uses include pinning gears or pulleys to shafts, application as hinge pins, dowels, replacement for cotter pins and as shafts for small gears. Diameters range from 0.078 to 0.500 inch. The smaller units start at 3/16 in. length. Largest stock length of the ½-in. pin is 3 inches.

If you write maker identify as IEN - 2045

PLASTIC . . Paper base laminates for manufacture of insulating parts

Source: TAYLOR FIBRE CO.
Dept. IEN, Norristown, Pa.

Technical data upon request

Taylor XXXP-300 for hot punching at 135 deg. C and Taylor XP-400 for cold punching at room temperature are two new translucent laminated sheet materials available in 49 by 49-in. sheet size. Both feature uniformity and clean cutting and punching characteristics. Both have excellent electrical resistance properties, low water absorption and are flame retarding. Both sheets are available in production quantities for use where a combination of physical and electrical properties is required.

If you write maker identify as IEN - 2046

TIMING . . Electric interval unit for program operation in 24 hr. cycle

Source: SANGAMO ELECTRIC CO.
1110 Converse St., Springfield, Ill.

Catalog Sheet 1020

Type B is a new motor driven timing assembly with levers for two "on" and two "off" operations of a single-pole single-throw switch rating 30 amp. on 110-volt ac. The mechanism is enclosed in a steel housing with a hinged cover and sealable hasp. Overall dimensions are 4¼ by 3⅛ by 7¼ inches. Trippers can be positioned for various on and off cycles in a 24-hr. period. List price is $13.50.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 88

If you write maker identify as IEN - 2047

For Precision Flatness and Finish...

on Metals, Ceramics, Quartz and Plastics...

USE A CRANE LAPMASTER

With a Lapmaster you can lap different parts in one cycle—lap a wide range of parts of different materials in short or moderate production—lap identical parts at tremendous production rates and maintain flatness to one light band (.0000116"), surface finish to 2 or 3 RMS. *Production lapping may be the solution to your problem. Get all the facts.*

Full facts on Lapmaster production lapping—Flatness interpretations available in two illustrated booklets. They are yours for the asking.

CRANE PACKING COMPANY
LAPMASTER DIVISION
1015 CUYLER AVENUE • CHICAGO 13, ILLINOIS

If you write maker identify as IEN - 2048

BARBER COLMAN

Wheelco Flame-otrols

Safeguard
• Boilers
• Ovens
against flame failure hazards

the accepted combustion safeguard for oil and gas fired equipment

Accepted and recommended by safety engineers as the most positive and dependable protection against explosion hazards due to flame failure, Flame-otrol is available for either manual or automatic operation. Approved by Underwriters' Laboratories and Associates Factory Mutual Laboratories. Write today for Bulletin F2-3.

Factory-trained field engineers in all principal cities

WHEELCO INSTRUMENTS DIVISION • BARBER-COLMAN COMPANY
Dept. B, 1516 Rock St., Rockford, Illinois

If you write maker identify as IEN - 2049

"Hamilton Watch Co. counts on AMF DeWalt for all maintenance!"

says Mr. Moses Good, Asst. Maintenance Engineer, Hamilton Watch Company, Lancaster, Pa.

"Our 2 De Walts do all our boxing and crating, and make all the work benches, cabinets and other furniture for our many departments. De Walt® is really versatile, we cross-cut, miter, bevel, compound miter and even do routing jobs sometimes. It's tops for all-around, all-purpose maintenance."

With one low-cost De Walt you'll be able to do just about any maintenance job—quickly ...safely...accurately. Takes up little space—takes the place of many machines.

Send for catalog to AMF De Walt Inc., Dept. IEN-54-2, Lancaster, Pa.

De Walt Inc. Lancaster, Pa.

DE WALT

POWER SAWS

In Canada: De Walt Canada Ltd., Guelph, Ontario

Subsidiary of AMERICAN MACHINE & FOUNDRY COMPANY, New York

If you write maker identify as IEN - 2050

Chicago MOUNTED Wheels

...now even better with

79E BOND

Buy Chicago Mounted Wheels—bonded with 79E Bond—and you'll never use any other!

79E—a tough new bond exclusive with Chicago Wheel—is the sensation of the industry . . . it does a BETTER grinding, burring, and finishing job FASTER. A size and shape for every use. Deliveries are excellent—Order today.

CHICAGO WHEEL & *Mfg.* Co.

Dept. N • 1101 West Monroe Street, Chicago 7

If you write maker identify as IEN - 2051

Cut Costs with MEAD MIDGET Air Clamps!

Horizontal and Vertical!

Pneumatic Cylinders

Both models deliver 80 lbs. pressure on a line pressure of 100 lbs. They'll save countless man-hours in assembly operations involving welding, riveting, bolting, etc. *Advantages over mechanical clamps:*

1. Any number can be operated by single master valves.
2. Easily installed in cramped corners.
3. Equal ram pressure at any stroke point.

Send for new Mead AIR POWER Catalog, describing our line of Air Clamps, Air Vises, Air Presses, Work Feeders, Valves, Controls, etc.

MEAD SPECIALTIES COMPANY

4114 NO. KNOX AVENUE, DEPT. EA-24, CHICAGO 41, ILL.

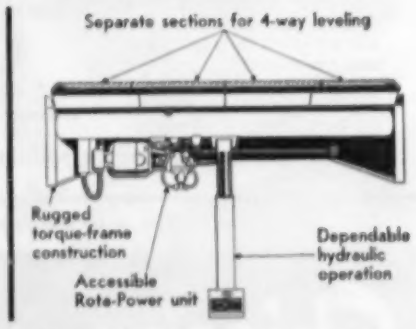
If you write maker identify as IEN - 2052

ROTARY'S

NEW Leva-Dock

Adjustable hydraulic ramp for loading docks

- Low cost
- Simple installation
- Easy maintenance
- Assured Safety
- 4-way leveling



■ **Faster, Safer Loading**—Hundreds of material handling men were interviewed, thousands of loading docks checked before the new LEVA-DOCK was designed and engineered. It's Rotary's practical, economical answer to the loading dock problem.

This new automatic ramp compensates 4 ways for varying truck bed heights, out-of-level trucks, and truck spring deflection. Power trucks move quickly, safely in and out of trucks or trailers. A new automatic safety device prevents accidents and costly delays.

The Leva-Dock is a rugged, self-contained unit with oil reservoir mounted in torque-tube frame. All piping and wiring done at the factory except power leads and control wires. Installation costs are cut to the bone.

Mail the coupon and we'll show you how to make big savings at your loading dock.

Rotary Leva-Dock

MAIL FOR COMPLETE DATA

Rotary Lift Co.
1146 Kentucky, Memphis 2, Tenn.

Send information on the LEVA-DOCK to:

Name _____

Address _____

NEW LITERATURE—Concluded

If you write maker identify as IEN - 0178

TRAMRAIL . . Overhead handling equipment assembles to suit the job from monorail track, switches, crossovers, cranes, bridges, trolleys, hoists. Bulletin 109, 8 pages, tells about components and applications. Forker Corp., 2036 Random Road, Dept. IEN, Cleveland 6, Ohio

If you write maker identify as IEN - 0179

TRANSFORMERS . . Dry-type units from 2½ va. to 750 kva. are covered as to sizes, ratings, connections, list prices in 22-page catalog. Jeffries Transformer Co., 1710 E. 57th St., Dept. IEN, Los Angeles 58, Calif.

If you write maker identify as IEN - 0180

HAND TRUCKS . . 50 models of floor trucks, 12 types of dollies, 16 styles of casters are described in 12-page Junior Catalog 54-G. Nutting Truck & Caster Co., 1125 W. Division St., Dept. IEN, Faribault, Minn.

If you write maker identify as IEN - 0181

POWER LIFT TRUCK . . Pneumatic-tire fork truck is for outdoor or inside service. It rates 4,000 lb. capacity, has a Wisconsin air-cooled engine. Bulletin 1284, 8 pages. Hyster Co., 2616 N. E. Clackamas St., Portland 8, Ore.

If you write maker identify as IEN - 0182

POWER LIFT TRUCKS . . Illustrated summary on a line of electric lift trucks, pallet and fork designs, attachments. Condensed Catalog, 4 pages. Automatic Transportation Co., 149 W. 87th St., Dept. IEN, Chicago 20, Ill.

If you write maker identify as IEN - 0183

TUBE FITTINGS . . 80-page Catalog H gives design and engineering data, list prices, on fittings for copper plumbing. It marks the company's 50th year. Northern Indiana Brass Co., 935 Plum St., Dept. IEN, Elkhart, Ind.

If you write maker identify as IEN - 0184

TUBES . . Condenser and heat-exchanger tubes in copper, bronze, brass, cupro-nickel, aluminum, steel. Information on standard and finned types, application, corrosion, is in 40-page "Condenser Tubes." Wolverine Tube Div., 1850 Guardian Bldg., Dept. IEN, Detroit 26, Mich.

If you write maker identify as IEN - 0185

OPERATING VALVES . . Lever-operated manual selector valves for service to 6,000 lb. pressure, also solenoid valves to 3,000 lb. and pressure switches to 12,000 lb. Shear-Seal Catalog 3-G, 20 pages. Barksdale Valves, 5125 Alcoa Ave., Dept. IEN, Los Angeles 58, Calif.

If you write maker identify as IEN - 0186

SOLENOID VALVES . . And pressure-operated designs to control flow of air, nitrogen, hydraulic fluid, alcohol, nitric acid, liquid oxygen. Catalog 200, 48 pages. Bridgeport Thermostat Div., Robertshaw-Fulton Controls, 1225 Connecticut Ave., Dept. M, Bridgeport 1, Conn.

If you write maker identify as IEN - 0187

VENTILATING . . Information on installation and maintenance of fans, blower performance charts, chart of rectangular equivalents of round ducts, duct resistance chart, recommended velocities for exhaust hoods, noise rating. Bulletin A-108, 16 pages. Hartzell Propeller Fan Co., 1025 Roosevelt Road, Dept. IEN, Piqua, Ohio

If you write maker identify as IEN - 0188

WATER TREATING . . Mixed-bed demineralizer produces pure water by means of ion exchange. Summary on how it works in 4-page Bulletin 126. Barnstead Still & Sterilizer Co., 104 Lanesville Terrace, Dept. IEN, Boston 31, Mass.

If you write maker identify as IEN - 0189

WEIGHING . . Precision balances for laboratory use have air damping cylinders and synthetic-sapphire surfaces against which knife edges bear. One is an automatic-loading model. Made in England. Bulletin 329, 4 pages. Burrell Corp., 2223 Fifth Ave., Dept. IEN, Pittsburgh 19, Pa.

If you write maker identify as IEN - 0190

WELDING MATERIALS . . Electrodes, rod and fluxes are listed for 12 base metals from steel to magnesium in new 32-page "DirectoRod Guide." Included are recommendations on some 300 metal-joining operations. Eutectic Welding Alloys Corp., 40-40 172nd St., Dept. IEN, Flushing 58, N. Y.

If you write maker identify as IEN - 0191

WIRE ROPE SLINGS . . Pin-Lock thimbles are a new feature of the company's Red-Strand 8-part braided slings. They are held by removable steel pins for reuse. "New Ideas" Folder 33, 4 pages. Leschen Wire Rope Div., H. K. Porter Co., 5909 Kennerly, Dept. IEN, St. Louis 12, Mo.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 2054

How cost-wise buyers rate

SPROCKETS and CHAIN

for drives from fractional to 40 h. p.—conventional and interchangeable tapered types

IN STOCK AT 92 BOSTON GEAR DISTRIBUTORS at Factory Prices

Look under "Gears" in the Yellow Classified Section of your Telephone Directory for the one nearest you.

Get the new BOSTON Gear Sprocket Catalog Supplement SC-2. Prices and buying information on complete line of sprockets, chain and chain breaking tool. Ask your BOSTON Gear Distributor, or write: Boston Gear Works, 63 Hayward St., Quincy 71, Mass.

If you write maker identify as IEN - 2055

portable grinding is profitable grinding—with SIMONDS resinoid bonded grinding wheels

These wheels cut fast, hold their shapes, give long service, and include everything you need—straight wheels, cup wheels, cones, pot-balls and blind-end wheels. Resinoid bonded for high speeds up to 9500 s.f.p.m. Write for Catalog Bulletin ESA-62.

SIMONDS ABRASIVE CO.

PHILADELPHIA 37, PA.

Division of Simonds Saw and Steel Company

DISTRIBUTORS IN PRINCIPAL CITIES

BRANCH WAREHOUSES: Boston, Detroit, Chicago, Portland, San Francisco

If you write maker identify as IEN - 2056

Acme's New *Direct-Reading* **CHAMFER** *Micrometer* **GAGE**

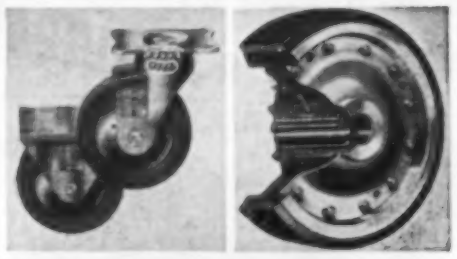
● Reads like any standard depth micrometer. Precision made for close tolerance work. Saves time, reduces error, reduces rejects. Quickly pays for itself. Send for details.

ACME INDUSTRIAL COMPANY

215 N. Laflin St., Chicago 7, Ill.

MFRS. OF STANDARDIZED DRILL JIG AND FIXTURE BUSHINGS

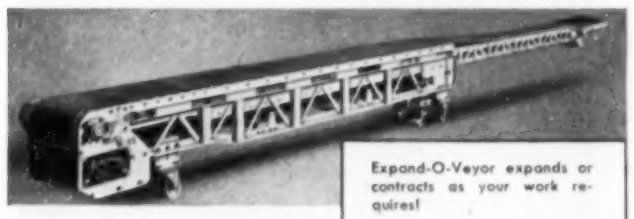
If you write maker identify as IEN - 2057



DARNELL
Casters & Wheels
Always SWIVEL and ROLL

DARNELL CORPORATION, LTD.
DOWNEY (LOS ANGELES COUNTY) CALIFORNIA
60 WALKER STREET, NEW YORK 13, NEW YORK
36 NORTH CLINTON STREET, CHICAGO 6, ILLINOIS

If you write maker identify as IEN - 2058



Expand-O-Veyor expands or contracts as your work requires!

Eliminates lost time caused by shifting equipment!

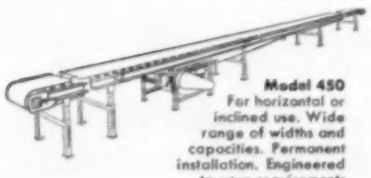
Where can *you* use this new FARQUHAR Package-Handling *EXPAND-O-VEYOR?*

Use this new Farquhar Expand-O-Veyor at maximum length settings one day . . . at minimum the next day. Ideal for use on the end of a fixed conveyor system, permitting the discharge point to be varied without moving your entire line. Perfect for loading and unloading trucks—can be shortened or expanded as the truck becomes loaded or emptied. Get more information about this new Expand-O-Veyor's versatility today. Write to the address shown below, telling us what you move. There's no obligation, of course.

FARQUHAR HAS CONVEYORS FOR EVERY PURPOSE

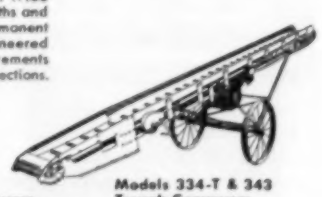
Model 431
Rugged, medium duty package-handling conveyor. Portable or fixed units. Horizontal or inclined. Various mountings.

Models 436 and 438
For light or medium duty. Permanent or portable installations. 12" to 18" belts.



Model 450
For horizontal or inclined use. Wide range of widths and capacities. Permanent installation. Engineered to your requirements from standard sections.

Gravity Conveyors
Roller or Wheel type. Black velvet or Standard finish.



Models 334-T & 343 Trough Conveyors
For handling bulk, abrasives, powders, aggregates, etc., as well as small bags and bundles.

OLIVER Farquhar CONVEYORS

FREE! "Owners Report"—a booklet of case histories describing money-saving Farquhar conveyor installations. Write: THE OLIVER CORPORATION, A. B. Farquhar Div., Dept. F-32, York, Pa.

POWER-BELT & GRAVITY CONVEYORS

If you write maker identify as IEN - 2060

COUNTING . . Electronic instrument runs to 10,000 in each of two channels

Source: POTTER INSTRUMENT CO.
115 Cutter Mill Road, Dept. IEN, Great Neck, N. Y.

One of twelve models

Model 244 is a new dual-sequence electronic counter with ranges from 1 to 10,000 and counting rates to 60,000 per min. in each of two channels. Front panel rotary switches provide for independent setting of each channel direct to predetermined numbers. At the end of each predetermined count, a control output is provided in the form of relay contact closure or a voltage pulse. Switching between the channels and channel reset are automatic and instantaneous. The model shown is one of twelve in the Series-200 instruments to employ photoelectric, magnetic, impact and stylus detectors.

If you write maker identify as IEN - 2061

PUMP . . Neoprene impeller rotary, self-priming, 5.5 gpm. at 10 ft. head

Source: JABSCO PUMP CO.
2031 N. Lincoln St., Dept. IEN, Burbank, Calif.

Please note our error

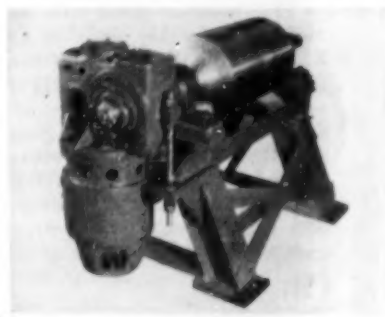
We call your attention to our error in naming capacity of the new Model-3010 Jabsco Pump, previously described IEN-13624-53, as 60 gpm. at 10 ft. head. We should have said 5.5 gpm. at 10 ft. head.

The impeller flexes to provide the pumping action. Suction lift is 15 ft. dry, 25 ft. primed. The shaft can be specified in stainless steel, Hastelloy B or C, or Pyrex glass.

If you write maker identify as IEN - 2062

DRIVE . . Geared head motor and torque rod for runout table roll

Source: WESTINGHOUSE ELECTRIC CORP.
511 Wood St., Dept. IEN, Pittsburgh 30, Pa.



For reversing duty

New design of geared head motor assembles on the shaft extension of a roll in a runout table. The motor lies in vertical downward position to shorten the width required for the previous horizontal design by about 18 inches. The motor is prevented from turning by a spring equipped torque rod located between the gear housing and the roll support in the runout table.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 2063

NEW CONTROL SYSTEMS on M & T WELDERS for GREATER ACCURACY and CONVENIENCE

ONE-DIAL DOUBLE CONTROL PANEL eliminates plug-ins on DC WELDERS

New control system on all M & T DC Machines now makes regulation of welding current easy and positive! Simply set the electrode selector, then dial for required current . . . Welders are available in light-duty 200 amp and heavy-duty 200, 300 and 400 amp models—motor-generator or gas-driven.

RANGE SWITCH TO SPEED RANGE CHANGING ON AC WELDERS

New range switch provides rapid changing from high to low or low to high range . . . No cable leads to unplug, no connections to make . . . Case mounted primary switch permits turning off welder to save current between welds . . . M & T AC Transformers, all silicone insulated, are furnished in light-duty 200 amp and heavy-duty, industrial ratings of 200, 300 and 400 amp.

Investigate these improved DC and AC Machines as well as M & T INERT ARC WELDERS and RECTIFIERS. They're all part of a complete line—Second to none!

METAL and THERMIT CORPORATION
100 East 42nd Street • New York 17, N. Y.
MUREX ELECTRODES • ARC WELDERS • ACCESSORIES

If you write maker identify as IEN - 2064

Quik-Lift Electric Hoists, 17 models, capacities from 500 to 4,000 lb.

"what's so good about COIL CHAIN on Electric Hoists?"

Coffing Quik-Lift Electric Hoists are offered with coil chain. There are many good reasons why.

1. A coil chain hoist has 360-degree flexibility.
2. Coil chain will feed into a hook-suspended hoist from an angle.
3. Coil chain will not wind up or kink regardless of load.
4. Coil chain cannot fray
5. Coil chain shows greatest resistance to corrosion.
6. A coil chain hoist may be hook-suspended since load never shifts.
7. A coil chain hoist may be adapted for any height of lift.
8. Coil chain requires less maintenance — there's more production time.

That's what's so good about coil chain on Quik-Lift Electric Hoists. For full details, write for bulletin P2E.

COFFING HOIST CO., Danville, Illinois
Sold by Distributors Everywhere

Hoist-Alls • Safety-Pull Ratchet Lever Hoists • Mighty-Midget Pullers • Spur-Gear Hoists • Differential Chain Hoists • Load Binders • I-Beam Trolleys

If you write maker identify as IEN - 2065

STOP DESTRUCTIVE VIBRATION OF WATER LINES

with Masonellan Water Reducing Valves

By maintaining uniform industrial or domestic water pressures, this compact, sturdy reducing valve not only reduces destructive strain on plumbing, but also stops "singing" and splashing from fixtures — without cutting down flow. Lasts for years with practically no maintenance.

Initial pressures up to 150 lbs., reduced to any pressure from 10 to 100 lbs. Sizes from ¼" to 2".

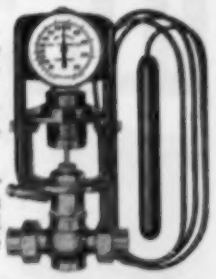
Call your local Mason-Neilan Industrial Distributor for fast, dependable service.

MASON-NEILAN REGULATOR CO.
1188 Adams St., Boston 24, Mass., U. S. A.

If you write maker identify as IEN - 2066

Cut Cost of METAL FINISHING With POWERS

NEW Temperature REGULATOR



For Plating, Anodizing, Bonderizing, Pickling, Cleaning, Rinsing, and Chromate Dips. Powers No. 11-MF Regulators will help you get the most effective use from various solutions by holding them at the right temperature automatically.

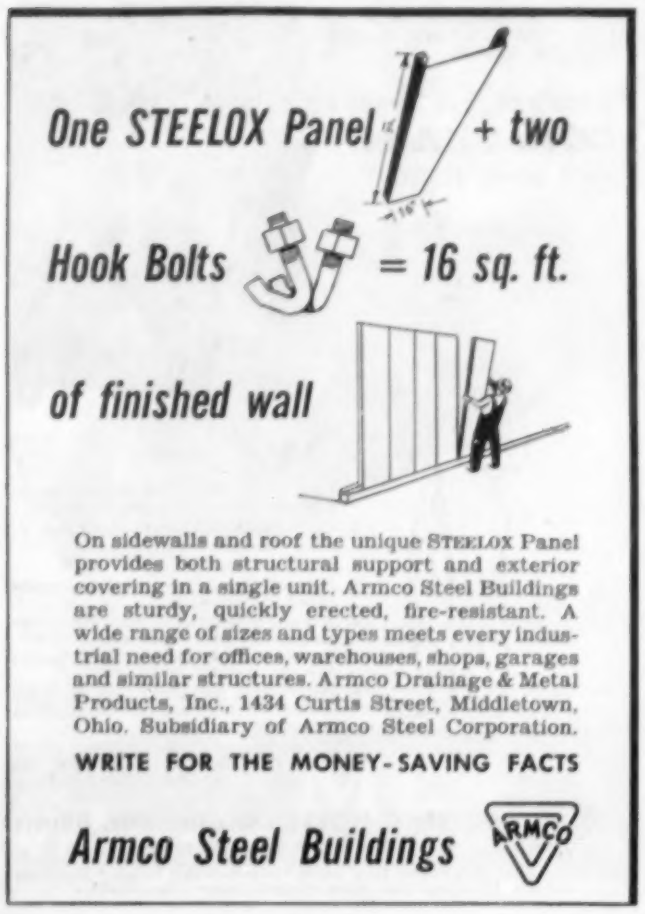
Plastic Covered Thermal Bulb and Tubing—is highly resistant to solutions in above processes. Prevents electrical shorts. No insulators required for the regulator.

Easy to Read 4" Dial Thermometer—indicates temperature of liquid being controlled and makes it easy to adjust regulator for different temperatures. (561)

Bulletin 330 describes this simple, dependable control.

THE POWERS REGULATOR CO., SKOKIE, ILL.
Offices in over 50 Cities, see your Phone Book • Established in 1891

If you write maker identify as IEN - 2067



If you write maker identify as IEN - 2068

Geared Power SIMPLIFIED WITH SYNCROGEAR

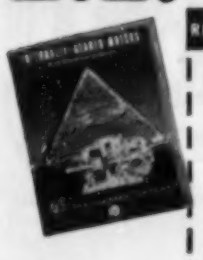
The motor that internally gears its speed

DON'T go to the expense of installing a gear box with extra coupling and guards to rig up slow speed for a motor. Install the *U.S. Syncrogear motor* and avoid extra contraptions. You'll simplify your power hook-up, save space, eliminate hazards and give your driven machine the most efficient power. The U.S. Syncrogear motor was one of the first complete integral power units, introduced 22 years ago. It's backed by experience, tested and proved performance and engineering "know-how" that only U.S. MOTORS can offer to those seeking the most dependable geared motor power.

SYNCROGEAR ADVANTAGES

- Compact—rugged—quiet
- No external gear box
- No extra coupling
- Internally-geared
- Single unit on one base
- Completely housed
- Reduced frictional losses
- Permanently-aligned parts
- Super-hardened gears
- Pyramidal supporting base
- Solid shank pinion
- Normalized castings
- Extra large oil reservoir
- Asbestos-protected windings
- In-a-line shaft
- Neat, streamline appearance
- Drip-proof surface

U.S. SYNCROGEAR MOTOR 4 TO 10,000 RPM. 1/4 TO 30 H.P.



REQUEST FOR SYNCROGEAR MOTOR BOOKLET

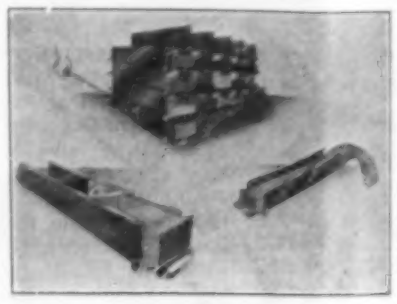
U. S. ELECTRICAL MOTORS INC.
Box 2058, Los Angeles 54, Calif.
or Milford, Conn.

NAME_____
COMPANY_____
ADDRESS_____
CITY_____ ZONE____ STATE____

If you write maker identify as IEN - 2070

STORING . . Steel racks hold wire in orderly lots for assembly

Source: STACKBIN CORPORATION
1077 Main St., Dept. IEN, Pawtucket, R. I.



Stacks securely

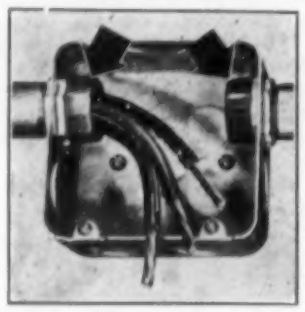
Wirack designates a new green enameled steel rack with raised lips at the two ends and an "evener" pusher plate and eyes for a graduated positioning hook. The racks are stacked, one on the other, to hold various sizes and lengths of wire in orderly arrangement at an assembly location. Panels on the ends take identification labels.

Individual rack dimensions are 2½ by 15 by 2 inches. Loading can be handled from the rear and the pusher plate employed to adjust a given lot of wire to a correct front position.

If you write maker identify as IEN - 2071

INSULATING . . Plastic bushing applies on ends of electric conduit

Source: THOMAS & BETTS CO.
60 Butler St., Dept. IEN, Elizabeth, N. J.

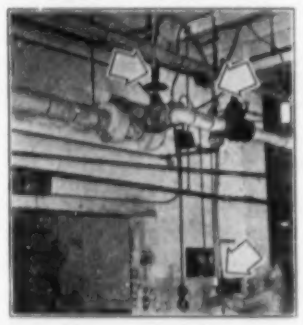


Typical application

Sizes range from ½ to 6 in., for standard rigid electric conduit, in this new cellulose acetate butyrate shatter proof bushing. It can be struck by tools, dropped on a concrete floor without danger of breaking or deforming. It is approved by Underwriters' Laboratories and conforms to requirements of the National Electric Code. Construction employs a fold back throat, dual purpose threads, blue color.

If you write maker identify as IEN - 2072

Valves mounted overhead and in other inaccessible positions can be connected to hand wheels at convenient floor level by means of flexible shafting as shown in the illustration. Here is shown an 8-in. hand wheel on a steam valve connected by a 1-in. flexible shaft with a 9-in. plastic hand wheel at the operator's position. Valves having hand wheels to 27 in. in diameter can be controlled in this manner by shafts as long as 50 feet. Information on the subject, as well as the equipment for an installation, can be obtained from Stow Mfg. Co., 25 Shear St. Dept. IEN Binghamton 25, N. Y. A design manual, No. 528, illustrates and describes the equipment.



All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 2073

Great Motors from Great Britain!

Newman Totally Enclosed Fan Cooled Squirrel Cage Motors

- world-famous NEWMAN MOTORS
- net savings up to 40%
- immediate delivery
- unconditionally guaranteed
- superior design— to N.E.M.A. standards
- offices in principal cities

For the first time, the complete world-famous line (2 million installed in 62 countries since 1935) of NEWMAN MOTORS, built to N.E.M.A. standards, is offered to the American Market.

Immediately available from our warehouse in New York in a complete range of squirrel cage and wound rotor types in sizes up to 230 H.P. *Any motor sent free and without obligation for examination and testing.*

These are new, high-quality motors stamped with the prestige of a great motor-making company. Vast savings, dependability, unconditional guarantee are offered to American buyers.

Write for a catalog and price list to-day

Newman INDUSTRIES (AMERICA) INC.

If you write maker identify as IEN - 2074

If you need a cylinder with 2", 3", 4", 6", 8", 10" or 12" diameter, and 6", 12", 18", 24" or 36" stroke, check with us. We usually have it in stock and if we ship it air freight tonight, you will have it tomorrow or the next day. If you need a cylinder with a different stroke length, we have the necessary components to assemble and ship your cylinder in a matter of just a few days.

• and when you get it, you will have a cylinder that is sturdy, reliable and built to give you long and satisfactory service.

Bulletin 500

Ledeen Cylinders are good cylinders.

VALVES • CYLINDERS
VALVE ACTUATORS
AIR-HYDRAULIC
PUMPS & BOOSTERS

Ledeen Mfg. Co.
1602 San Pedro St.
Los Angeles 15, Cal.

If you write maker identify as IEN - 2075

Make Gerrard your single source of supply for both ROUND and FLAT Steel Strapping. That's all there is to it.

You'll save on handling costs, since packaged cartons, crates, and ungainly bundles of all shapes and sizes can be handled much faster and easier than loose pieces.

You'll save time in tallying. Steel strapped bundles need be counted only once. One inventory. And no loose pieces to get lost.

Bundles tied with Steel Strapping are pilfer proof.

You'll save on freight charges by obtaining both your ROUND and FLAT Steel Strapping from a single source. And paper work will be reduced since one purchase order brings you both types of strapping.

"One source" ordering will reduce your unit costs and freight charges, too.

WHY NOT CONTACT GERRARD RIGHT NOW.

Without obligation to you, one of our packaging engineers will carefully point out all the specific applications and advantages of U-S-S GERRARD ROUND and FLAT Steel Strapping that will *save you money.*

GERRARD STEEL STRAPPING DIVISION,
UNITED STATES STEEL CORPORATION
4717 South Richmond Street, Chicago 32, Ill.

U·S·S GERRARD

Round Steel **STRAPPING** *Flat Steel*

UNITED STATES STEEL

If you write maker identify as IEN - 2077

Commander TAPPER

★ Wider Range...1 Tapper Handles #0 to 3/4" Taps

★ Automatic Tap Protection

★ Furnished to fit any Drill Press

Commander—"The Tapper That Thinks For Its Operator," has the adjustable full range torque control that instantly stops any tap when it becomes dull, loaded, strikes a hard spot or bottoms in blind hole tapping. Assures maximum tap protection, higher production, even with inexperienced operators.

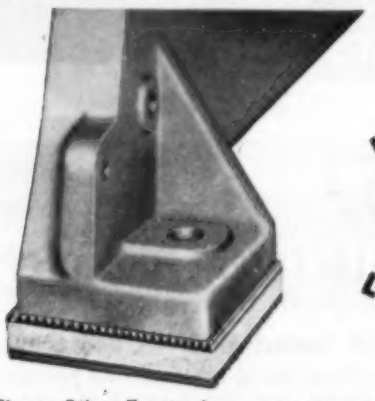
Your nearby Commander Distributor can give you a demonstration in your own plant. Write for his name and a copy of the NEW Commander Full Line Catalog #851

COMMANDER MFG. CO.
4219 W. Kinzie St. Chicago 24, Ill.

Product of Commander...Builder of Production Tools

If you write maker identify as IEN - 2078

It's SIMPLE To Control VIBRATION and NOISE with Elasto-Rib...



NO BOLTING

NO CEMENTING

LOW COST

Elasto-Rib effectively stops transmission of vibration and noise by utilizing the elastic and damping properties of both cork and rubber.

It is fast and easy to install. For most machine applications, no bolts, lag screws or cement are required. Sheets 24" x 36" can be sawed or cut to size as needed.

New, illustrated booklet tells all about Elasto-Rib and how to install it. Ask for ER-701 and free sample.

THE KORFUND COMPANY, INC.

KORFUND VIBRATION CONTROL — SPRINGS — RUBBER — CORK

48-35 E. Thirty Second Place, Long Island City 1, N. Y.
In Canada: 510 Canal Bank, Ville St. Pierre, Montreal

If you write maker identify as IEN - 2079

D.O.James
Established 1888

Continuous-tooth
HERRINGBONE GEAR SPEED REDUCERS
The Gear With the Backbone

The operating efficiency and dependability of these reducers is continuous testimony to their design and inbuilt qualities of manufacture. They are made in single, double and triple reductions — come in many sizes and in a wide ratio and horsepower range.

SEND FOR CATALOG 40-C

D. O. JAMES GEAR MANUFACTURING CO.
1140 WEST MONROE STREET • CHICAGO 7, ILLINOIS

If you write maker identify as IEN - 2080

HANDLING . . Tubular steel in portable design takes two pallets

Source: PALTIER CORPORATION
1701 Kentucky St., Dept. IEN, Michigan City, Ind.

Sizes and capacities to specification

Palteam Portable is a new unit in the company's line of material handling racks made of tubular steel. It is equipped with slip fitting posts so it can be taken apart, moved and assembled as required. Two pallets can be loaded onto it as shown in the illustration. Either can be picked up and removed, or rack and unit loads can be moved as a unit.

If you write maker identify as IEN - 2081

NAMEPLATES . . Metal foil, adhesive backed, specified designs

Source: NORTH SHORE NAMEPLATE CO.
43-01 Bell Blvd., Dept. IEN, Bayside, N. Y.

Picture bulletin upon request

Speedy-Cal trade names a new adhesive backed metal foil nameplate in which 0.003 foil is laminated with transparent self-adhesive bonding material faced with protecting cellophane. Following immersion in clear water at room temperature, for about a minute, each unit is dried between sheets of blotting paper and then the protective cellophane is removed to expose the adhesive. The nameplate is pressed against the surface on which it is to remain and is smoothed down in place by a roller supplied for this purpose. Maximum bond is obtained in about 24 hours. A heating iron can be employed to shorten the curing interval.

Colors, such as gold, red, yellow, green, black, blue, can be supplied. The company is prepared to make most any size or shape using either a steel rule or a blanking die. The work is done from the user's rough sketches or finished artwork. The units can be ordered in strip form so the user can emboss them in a typewriter for serial numbering or other purposes prior to application.

If you write maker identify as IEN - 2082

VALVE . . Air pressure regulator, pilot controlled, 2 to 120 lb. range

Source: C. A. NORGREN COMPANY
3432 S. Elati St., Dept. IEN, Englewood, Colo.

For precision control

Series 20AC00 designates new integral assembly of the pilot controlled air pressure regulator, previously described IEN-8216-53 as a two-part unit. The hand adjusted pilot applies regulated air pressure to control delivered air pressure through the main housing. Light spring pressure in the pilot eliminates need for a heavy adjusting spring to open and close the main flow passage.

Three sizes are ½ to 1 inch. Line pressure, on the high side, is maximum at 400 pounds. Working pressure is adjustable between 2 and 120 pounds.

If you write maker identify as IEN - 2083

MIXING . . Motor driven stirrer rotates magnet in non-magnetic vessel

Source: FISHER SCIENTIFIC CO.
719 Forbes St., Pittsburgh 19, Pa.

The Flexa-Mix

Alnico magnetic bar, coated with glass or with polyethylene, is placed inside a laboratory vessel made of glass, plastic, porcelain or non-magnetic metal. It is caused to rotate and set up mixing action when the vessel is rested upon the top of the stationary aluminum housing in which the motor operated drive is enclosed. This housing rests upon a cast iron plate that provides a 4-in. throat depth to a supporting rod at the rear.

Speed is controlled by a rheostat for a range between nearly stationary to 1,650 rpm. at full load. There is no mechanical connection between the drive and the magnet inside the vessel. Operation is on 110-volt ac. List price is $37.50.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 2084

YOU CAN DO IT FASTER with HANSEN ONE-HAND TACKER

Model T-1 tacking wood reinforcement on airplane braces.

Only ONE of 1001 Uses

TACKING wood reinforcement on airplane braces is but ONE of 1001 uses of HANSEN one-hand Tacker. Other uses include: fastening screens on TV sets, tacking radio and TV wires, refrigerator door gaskets, chair and auto-seat covers, insulation, etc.

(MODEL T-3-4 HANSEN TACKER)

Made in . . . 36 different models; for driving . . . 80 sizes of staples, the Hansen line offers you a model suited to your individual needs.

REQUEST BOOKLET

A.L.HANSEN MFG. CO.
5051 RAVENSWOOD AVENUE • CHICAGO 40, ILL.

If you write maker identify as IEN - 2085

TAPE ...via Graybar

All types of tape are promptly available through your nearby Graybar office or warehouse . . . top quality brands for any purpose.

In addition to tape, Graybar distributes *everything* electrical for wiring, lighting, power, communication, and ventilation . . . over 100,000 items.

send for this FREE Tape Bulletin

The complete story on tape. Applications, specifications, and descriptions of most of the major types of electrical tapes available. Friction, plastic, vinyl, weatherproof, self-bonding, high-voltage . . . they're all included in one compact bulletin. Send for your FREE copy today. *Graybar Electric Co., Inc. Executive Offices: Graybar Building, 420 Lexington Avenue, New York 17, N. Y.*

410-122

Call Graybar *first* for . . . Everything Electrical GraybaR

If you write maker identify as IEN - 2086

STRAP containers with these TOOLS

The most inexpensive way to protect shipping containers in transit is to reinforce them with steel strapping. Shown here is *Signode's* popular two-piece strapping tool outfit—the ST Stretcher, and the 3820 Sealer. They are sturdily but simply made, and their use can be learned easily by anyone old enough to work. These tools are designed for tensioning and sealing strapping around cartons, wood boxes, crates, bundles and packages of varying sizes and shapes. For detailed information about these tools and their use, write Signode Steel Strapping Co., 2611 N. Western Ave., Chicago 47, Illinois.

THIS SEAL MEANS SIGNODE SECURITY IN SHIPPING

If you write maker identify as IEN - 2087

TODAY'S BEST BUY!

Write for Details or See Your JOHNSON DEALER

MODEL J
10" x 18" Capacity

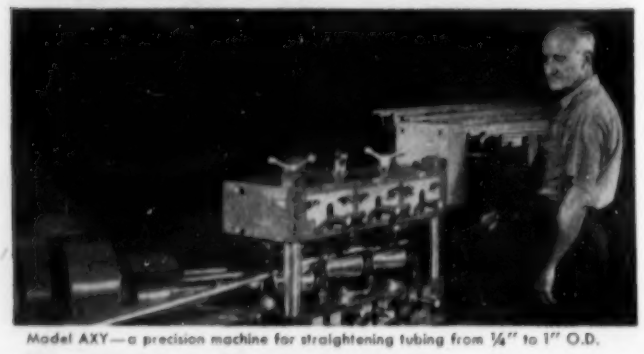
BONUS CAPACITY AT NO EXTRA COST

CUTS 10" ROUNDS, 18" FLATS

JOHNSON MANUFACTURING CORP.
ALBION, MICHIGAN

If you write maker identify as IEN - 2088

If you want tubing
STRAIGHT AS AN ARROW
you have a job for a
MACK-HEMP *guideless*
ROTARY STRAIGHTENER



Model AXY—a precision machine for straightening tubing from ¼" to 1" O.D.

Constantly, more and more manufacturers of varied products which include pipe and tubing (ferrous and non-ferrous) are placing Mack-Hemp guideless Rotary Straighteners in their production lines with substantial advantage. These machines are available in 12 sizes to handle the tiniest tubing (1/16" O.D.) to large pipe up to 15" O.D., meeting straightness and roundness specifications of unusually close tolerances.

Why not investigate what these Mack-Hemp guideless Rotary Straighteners are accomplishing for others—evidenced by many case histories in our files? They can probably solve your problem also! Send the coupon below for Bulletins No. 52 and S-7265.

Model A-4—one of the largest machines, will straighten pipe 5" to 15" O.D.

MACKINTOSH HEMPHILL CO.

Machinery Department, Ninth & Bingham Streets, Pittsburgh 3, Pa.

Makers of the Rolls with the Striped Red Wobblers

☐ Please send me Bulletins No. 52 and S-7265 giving case histories and detailed information about MACK-HEMP guideless Rotary Straighteners.

I am interested in straightening: _____
Type & Size of tubing

Name _____ Title _____

Company _____

Address _____

If you write maker identify as IEN - 2090

FASTENING . . Locking set screw, continuous thread on two diameters

Source: SET SCREW & MFG. CO.
5 Main St., Dept. IEN, Bartlett, Ill.

Test samples on request

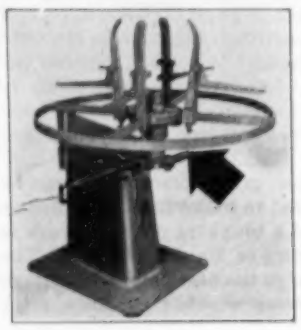
New design of the Zip-Grip locking set screw, previously described IEN-858-50, omits the previous top thread so locking action of the last few turns is confined to the uniform portion of the body and is kept away from the top edge where variations may occur. The new design assists in quick installation and provides distinctive identification. The screw is intended primarily for applications where vibration or close setting adjustment are factors.

Head design can be specified. Sizes are No. 0-80 to ⅝ in., 11 threads per in., in slotted and milled head and No. 4-36 to ⅝ in., 11 threads per in., with hexagon or fluted socket head.

If you write maker identify as IEN - 2091

HANDLING . . Wire reel with pivoted action to cushion pull

Source: A. H. NILSON MACHINE CO.
1523 Railroad Ave., Dept. IEN, Bridgeport 5, Conn.



Adjusts to coil

Pivoted arm, mounted between the spindle and base of this new reel assembly, carries the reel itself and is backed by a spring. Uneven pull on the wire, being taken from the reel by a feeding mechanism, will cause the reel to move in the direction of the pull against the cushioning action of the spring.

The movement is limited to 4 in., at which point a limit switch is operated to open the circuit to the feed drive so the feed is stopped. Thus the wire coil and the equipment to which it is being fed are protected against injury.

Model 51L has coil capacity of 175 lb. and 8-in. minimum inside diameter. Model 51M has 250-lb. capacity and 12-in. minimum inside diameter.

If you write maker identify as IEN - 2092

MARKING . . Stencil stamp prints shipping address on container

Source: WEBER ADDRESSING MACHINE CO.
200 W. Central Road, Dept. IEN, Mount Prospect, Ill.

$14.50 complete

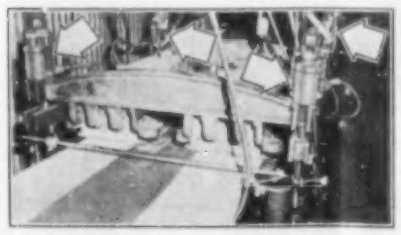
Direct-to-Container designates a new combination of the company's Type RJ-1 hand printer and stencil, with pre-printed cartons supplied by the carton manufacturer.

The stencil is prepared on a typewriter, either separately or at the time that the invoice or bill of lading form is being made. Then it is sent to the shipping department. There the stencil is clipped in place on the hand printer and is used to mark the address inside the preprinted frame on the carton.

From 40 to 50 cartons can be addressed per minute. The marking tool has a reservoir that holds sufficient ink for 7,500 to 10,000 applications. It can be supplied with one or two counters.

If you write maker identify as IEN - 2093

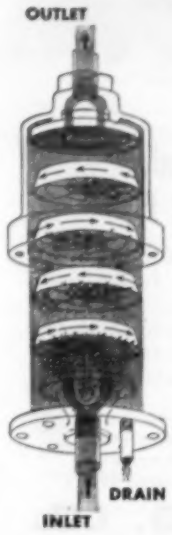
Four of the 30-ton center hole hydraulic rams made by Owatonna Tool Co., 371 N. Cedar St., Dept. IEN, Owatonna, Minn., have found a new use in holding down the head of a vulcanizing machine employed in repair of large conveyor belts. All four rams are connected to a single pump so equal pressure will be applied at the four corners of the machine platen. The machine has resulted in a belt repair cost reduction from $3.90 to $1.80 per foot.



All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 2094

EQUIPMENT LASTS LONGER
. . . PERFORMS BETTER . . .
when the
ARIDIFIER
SCRUBS, CLEANS AND DRIES
On Air and Gas Lines

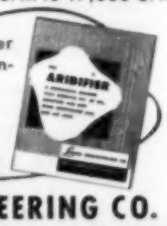


LASTS LONGER because . . .
The Aridifier's patented centrifugal-baffle action traps 92% of all dirt, oil, scale and water in gas or compressed air . . . and drains off these troublemakers *before* they can damage tools and equipment.

PERFORMS BETTER because . . .
The Aridifier protects tools against the freezing, fouling, caking and corrosion caused by dirt and foreign matter . . . assures the clean, dry air and gas that means better spray work, painting, lacquering, sand blasting, air cleaning, and similar operations.

Easily installed, the Aridifier maintains itself. 10 models. Capacity range; 7 CFM to 17,000 CFM.

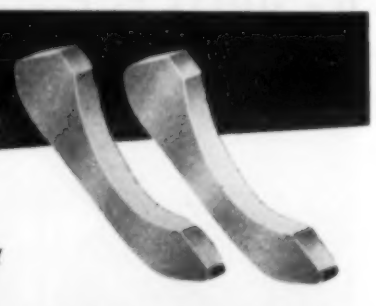
Learn HOW the Aridifier scrubs with a patented centrifugal-baffle action.
Write for This Catalog Now!



Logan ENGINEERING CO.
4902 W. Lawrence Ave., Chicago 30, Ill.

If you write maker identify as IEN - 2095

TWIN PURPOSES IN Gibsiloy



MOLDED ELECTRICAL CONTACTS

GIBSILOY MOLDED ELECTRICAL CONTACTS ALLOW YOU . . .

• **Wider Choice of Contact Materials and Shapes**
The variety of powdered metal compositions available in this type of Gibsiloy provides a range of contact selection to suit a given need. And odd contact shapes can be readily produced.

• **Economy with Quality**
Although the first Gibson consideration in molded Gibsiloys is quality, the powdered metal molding technique also provides economical manufacturing procedures. There is no scrap loss, and in many cases machine operations are avoided.

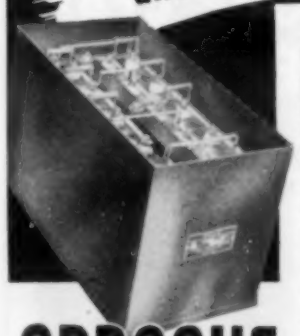
Write for Gibson Catalog C-520. It contains technical information useful to you. But, to be of greatest usefulness, let us work with you to help in solving your contact problem. Send us details.

Contacts Engineered to Your Requirements

Gibsiloy ELECTRICAL CONTACTS — *Manufactured by* GIBSON ELECTRIC COMPANY
8353 Frankstown Avenue, Pittsburgh 21, Pa.

If you write maker identify as IEN - 2096

HOW TO SAVE ON POWER BILLS
. . . also on wiring, switchgear and transformer costs!



Cut costs by installing Sprague power factor correction capacitors on your motors and other inductive electrical equipment! Monthly power bills can frequently be materially reduced. Greater loads can be handled from existing circuits. Wiring, transformer and switchgear costs can be greatly minimized in new installations.

SPRAGUE "ON-THE-SPOT" *Power Factor Correction* CAPACITORS

WRITE FOR GUIDE

We've put the whole power factor correction story in an easily understood 28-page guide 508, replete with cost saving suggestions and factual installation data. Write for your copy today.

SPRAGUE ELECTRIC COMPANY
165 Marshall St. • North Adams, Mass.

If you write maker identify as IEN - 2097

New DRY TAMP PERMAMix Floor Patch

Don't stop traffic to repair floors—use Permamix, the new all-temperature DRY TAMP floor patch.

DRY TAMP MEANS SPEED • No sticky mass to dig out of the drum or to handle • Permamix dry pours • sets instantly • feather edges perfectly • no production delays • non-skid surface.

ALL TEMPERATURE • Won't freeze • can be stored or used in *any* temperature • will store indefinitely • a stock room item • will not "set" in drum whether open or covered. Mistakes just can't happen. Tamp in place and traffic rolls.

CUTS MAINTENANCE COSTS on concrete, brick, tile or asphalt floors • no special equipment or skill needed • a one man job • comes in durable 50 lb. net wt. fibre drums • solve your floor patching problems for good.

Write for Details Now!

PERMAMIX CORPORATION

230 N. LaSalle Street • Chicago 1, Illinois

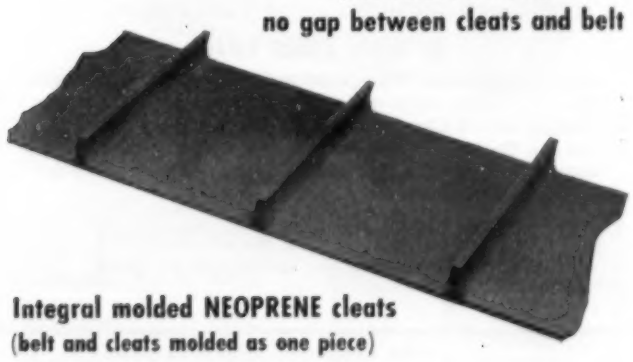
If you write maker identify as IEN - 2098

Only Portable Conveyor Belt of its kind

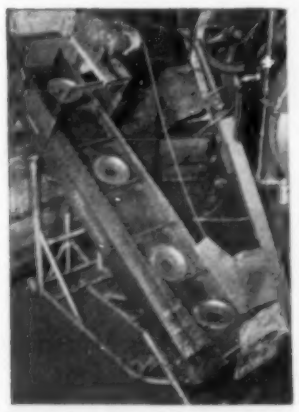
CINCINNATI Cleat Conveyor Belt

Over 2 years of the most rigid tests have proven that the CINCINNATI CLEAT CONVEYOR BELT is positively the most practical and most economical portable conveyor belt ...takes the place of all bolted-on cleat belts.

No stress or strain . . . no gap between cleats and belt



Integral molded NEOPRENE cleats
(belt and cleats molded as one piece)



Cincinnati Cleat Conveyor Belt installation at Industrial Wire Cloth Products Corp., Wayne, Mich.

- **Eliminates costly shut-down time due to cleat failure.**
- **Eliminates catching of small parts under cleats.**
- **Eliminates deterioration due to oil and grease.**
- **Eliminates cost of attaching cleats or repairing cleats later.**

No other portable conveyor belt has such high abrasive resistance...compare and you'll be convinced. Wherever inclined conveyors are used there's a need for Cincinnati Cleat Conveyor Belts.

Send for Sample and Literature

F. B. WRIGHT CO.

1565 Oakman Blvd., Detroit 38, Michigan

If you write maker identify as IEN - 2100

CRANE . . Mobile assembly rates 15 ton with outriggers in place

Source: KOEHRING COMPANY
3026 W. Concordia, Dept. IEN, Milwaukee 16, Wis.

For utility duty

The company announces improved design of its Model-205 truck crane. The operator's cab has been redesigned and the control levers have been rearranged. The turn table swings on four adjustable hook rollers. Straight boom jibs, 15 to 30 ft. in length, can be supplied for special high lift duty when this is required.

Assembly is on an engine driven truck provided with 10 forward speeds between about 2 and 32 mph. Two reverse speeds are about 2 and 4 mph. Power operated air brakes are built into each of the four driven wheels at the rear. The truck cab is mounted on the left front and is equipped with safety glass windows.

Gearing is made of carburized steel, flame hardened and enclosed for dirt-free lubrication. Traction brakes are automatically operated. The crane can be converted for operation as a clamshell, dragline, shovel or hoe.

If you write maker identify as IEN - 2101

ADHESIVE . . Double faced tape carries adhesive on both of its sides

Source: MINNESOTA MINING & MFG. CO.
900 Fauquier St., Dept. IEN, St. Paul 6, Minn.

Double coated

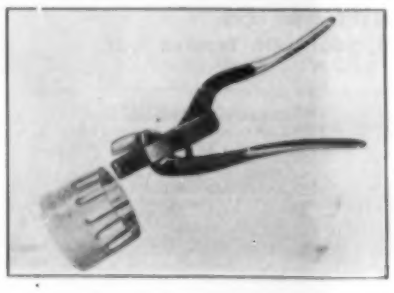
Scotch Brand No. 400 is a new self-adhesive tape for applications such as securing metal to wood or for splicing operations involving paper, cloth and metal foil. The two-sided tape sticks at a touch to hold mirrors in compacts, hat bands to straw hats, patterns to layers of cloth for multiple cutting.

Width is ¼ to 20 inches. Roll length is 36 yards. A protective gray liner minimizes loss of tackiness during storage. It peels off freely prior to application of the tape.

If you write maker identify as IEN - 2102

FORMING . . Plier type tool to crimp ends of sheet metal pipe

Source: WHITNEY METAL TOOL CO.
100 Forbes St., Dept. IEN, Rockford, Ill.



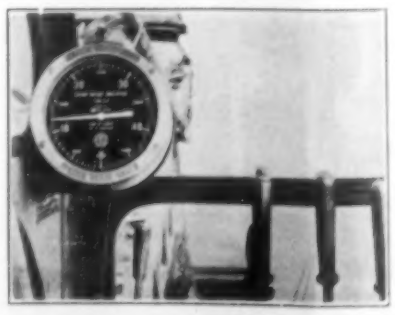
Catalog 16-54

Squeezing the handles of this new No. 111 hand pipe crimper moves the 1½-in. forming jaw down into the open anvil jaw to form a crimp, as deep or as long as required, within the jaw length limitation. Spring return opens the jaws when hand grip is released. The tool weighs 1 lb. and measures about 9 in. in length. It applies on any size of sheet metal pipe to 20 gage.

If you write maker identify as IEN - 2103

SIGNALING . . Weight indicator protects a crane against overloading

Source: MARTIN-DECKER CORPORATION
3431 Cherry Ave., Dept. IEN, Long Beach 7, Calif.



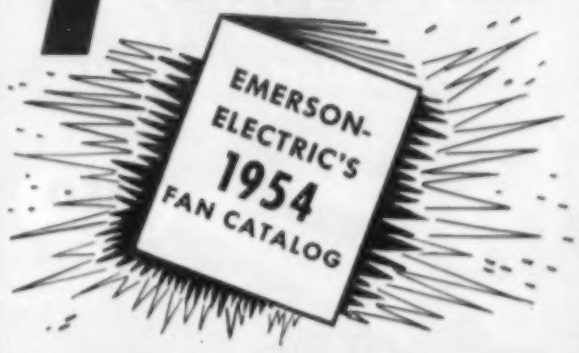
Shock protected

Hydraulic cylinder mounts at the dead end of the hoisting cable on a crane to actuate this new Type S-6 weight indicator when a load is lifted by the crane hook. An oil resistant wire braided synthetic rubber hose connects the cylinder and indicator. The latter mounts in the operator's cab so he can watch the load indication and know whether or not he is operating safely. The cylinder is made of bronze. The piston rod is stainless steel. Three indicator capacities read to 10,000, 25,000 and 50,000 pounds.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 2104

yours



Again this year Emerson-Electric offers the most complete fan line in America . . . fans for a wide variety of commercial, industrial and institutional uses. See them all in the new 1954 fan catalog. Write today for Catalog No. 759

THE EMERSON ELECTRIC MFG. CO.
St. Louis 21, Mo.

EMERSON ELECTRIC
FANS • MOTORS APPLIANCES

If you write maker identify as IEN - 2105

KODAGRAPH MICRO-FILE EQUIPMENT

Here's everything you need for a low-cost, trouble-free microfilming operation . . . one that will meet *your* individual requirements.

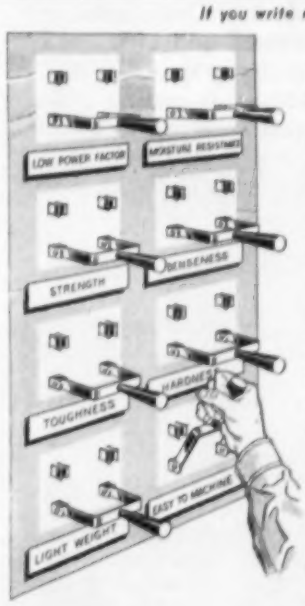
- **Kodagraph Micro-File Machines**—four separate models designed to meet a variety of conditions. *Each* a high-precision unit which can be operated by anyone.
- **Kodagraph Micro-File Film**—extremely fine grained, high resolution. Assures sharp, crisp rendering of all details.
- **Kodagraph Film Readers,** which permit you to view your films quickly, conveniently.
- **Kodagraph Micro-File Enlarger,** which enables you to make paper enlargements from 16mm. and 35mm. microfilms which are comparable in clarity to the originals.
- **Kodagraph Print Film**—ideal for making positive copies of negative microfilm records.

Write today
for free illustrated booklet giving full information.

EASTMAN KODAK COMPANY
Industrial Photographic Division
Rochester 4, N. Y.

Kodak

If you write maker identify as IEN - 2106



Choose the COMBINATION of properties you need

Light weight, strength, chemical and moisture resistance, hardness, toughness, density, high dielectric strength—Synthane laminated plastics combine them all in one easy-to-machine material. If your product—or a component—requires a specific *combination* of properties, it will pay you to investigate Synthane. The coupon below brings you full details.

SYNTHANE

Manufacturers of laminated plastics
SHEETS
RODS • TUBES
MOLDED-LAMINATED
MOLDED-MACERATED
FABRICATED PARTS

SYNTHANE CORPORATION
South River Road, Oaks, Pa.

Gentlemen:
Please send me the new Synthane Catalog without charge or obligation on my part.

Name _____
Address _____
City _____ *Zone* _____ *State* _____

If you write maker identify as IEN - 2107

IMPROVED QUALITY—LOWER COST

TURNABOUT®

ADJUST • A • FORK

HYDRAULIC LIFT TRUCK

with interchangeable forks

Improved design . . . mass production techniques, give you a quality product, **properly priced.** Proven superior performance . . . extra strength . . . highly maneuverable . . . easy operation. Resinoid type casters and aluminum leader wheels at no extra cost.

Easily interchangeable forks available in five standard lengths. Adjustable on truck frame to provide 25" or 27" width.

Unconditionally guaranteed for one year Write for descriptive bulletin

RACK HYDRAULIC EQUIPMENT CORPORATION

CONNELLSVILLE, PENNSYLVANIA

AGENTS IN PRINCIPAL CITIES-UNITED-STATES, CANADA, EUROPE

If you write maker identify as IEN - 2108

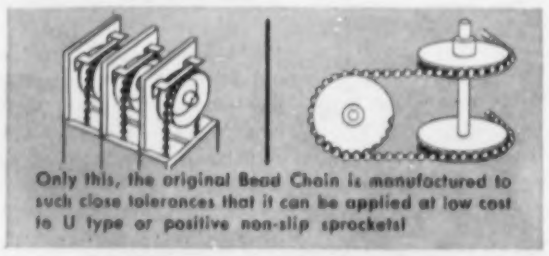
FOR POSITIVE, LOW-COST

SPROCKET DRIVES...

it will pay you to use genuine

Bead Chain

Only the manufacturer of *genuine* Bead Chain offers you a new, more versatile belt drive that will accurately time and control the movement of all types of devices. Among such applications are radio and television tuners, recorders, air conditioners and timing devices. Costly gearing mechanisms can be eliminated and efficiently replaced by the specially designed sprockets that accurately fit the individual beads *without slippage and backlash.* Friction is at a minimum and tensile strength of the Bead Chain belt (from 15 to 200 lbs.) is very high in proportion to size and weight.



Only this, the original Bead Chain is manufactured to such close tolerances that it can be applied at low cost to U type or positive non-slip sprockets!

Write to us today for detailed information about sprockets and Bead Chain belts. It can save you a lot of time and money later.

THE BEAD CHAIN MANUFACTURING CO.
59 Mountain Grove St., Bridgeport, Conn.

Please send me information about Bead Chain sprocket drives.

NAME_____

TITLE_____

ADDRESS_____

THE BEAD CHAIN MANUFACTURING CO., Bridgeport 5, Conn.
original and world's largest producers of Bead Chain

If you write maker identify as IEN - 2110

WELDING . . Portable spot machine mounts electrodes on separate head

Source: INTERSTATE MACHINERY CO.
1467 W. Pershing Road, Dept. IEN, Chicago 9, Ill.

For sale or rent

Power is supplied through an electric cord and plug from a 220 or 440-volt circuit to the transformer in the housing of this new Rex portable machine. Heat is set at a control knob on the housing. The secondary side of the transformer connects through flexible leads to the head assembly which is carried in a cradle on the machine. The electrodes are angled in their holders to reach into locations normally inaccessible.

The machine rates 10 kva. and will weld two pieces of 14-gage mild steel. The transformer is normally a 220-volt primary unit. A 440-volt assembly can be supplied upon specification. The operator rests the head in its cradle, coils the input line over one of the two handles and tilts the housing back to ride the wheels at the rear for movement from one location to another.

If you write maker identify as IEN - 2111

PIPE . . Reinforced plastic for corrosion resistant installations

Source: MAURICE A. KNIGHT
171 Kelly Ave., Dept. IEN, Akron 6, Ohio

Technical data upon request

The company announces a new line of pipe from 1½ to 12 in. in inside diameter and duct from 4 to 36 inches. It is made of the furan resin material, reinforced with chemical glass fiber, which the company previously developed and trade named Permanite. Wall thickness of the pipe ranges from ⅜ to ½ inch. It is ⅜ in. for the duct. The construction is light in weight.

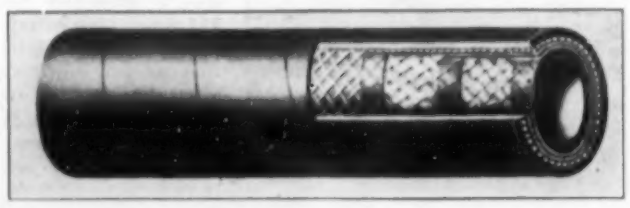
Bursting strength is about 300 lb. per sq. in. in the 4-in. pipe size. The surface is hard, non-absorbent and corrosion resistant to non-oxidizing acids, alkalis, organic solvents. It also is resistant to thermal shock and will stand up in temperatures to 280 deg. F. Recommended pressure is maximum at 40 to 60 lb., depending on the pipe size.

Pipe and duct can be cut in the field and connected using a wrapped joint construction. Special fittings are available to specification. Pipe sections are made with bell and spigot ends, with straight ends for wrap joints and with flared ends to take flanges.

If you write maker identify as IEN - 2112

HOSE . . Wire reinforced for steam rates to 200 lb. and to 385 deg. F.

Source: HAMILTON RUBBER MFG. CO.
P. O. Box 361-A, Dept. IEN, Trenton 3, N. J.



Trade named Endurance

Two plies of braided wire with a separating layer of heat resistant rubber reinforces the heat resistant tube in this new hose. Synthetic yarn bonds the abrasion resistant cover to the wire carcass. The hose is recommended for saturated steam pressure to 200 lb. and for superheated steam to 385 deg. F. Sizes range from ½ to 1½ in. in inside diameter.

If you write maker identify as IEN - 2113

Fiber board cartons, measuring 5½ by 5½ by 11 in., have replaced paper lined burlap bags holding 100 lb. of the blast

cleaning and peening steel shot abrasive manufactured by American Wheelabrator & Equipment Corp., 1119 S. Byrkit St., Dept. IEN, Mishawaka, Ind. The cartons are shipped on disposable pallets holding 1 ton each. Individual cartons can be lifted up to the abrasive charging point and the shot delivered without danger of spilling. Each pallet measures 30 by 48 in. and holds 40 cartons on end in five rows of eight.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 2114

THE *Workhorse* OF SMALL GRINDERS

Aro Short Grinder Model 7149, 17,000 R.P.M.

ARO does it *faster . . .* at *lower cost!*
That's why Rohr Aircraft at San Diego —and hundreds of other progressive plants today — prefer ARO. Complete line grinders for jet engines . . . also heavy duty vertical and horizontal grinders of all types. Write for new catalog 60.
The Aro Equipment Corp., Bryan, Ohio.
Aro Equipment of Canada, Ltd., Toronto, Ont.

ARO AIR TOOLS

Also . . LUBRICATING EQUIPMENT . . HYDRAULIC EQUIPMENT . . AIRCRAFT PRODUCTS . . GREASE FITTINGS

If you write maker identify as IEN - 2115

Replace Your Hammers With Air Power!

Cut Cost . . . Speed Up Hammer and Tool Operations with the

BIG BULLY AIR HAMMER

This 6 inch, 50 ounce Big Bully has Superior's exclusive metering trigger which delivers 0 to 9000 blows per minute.

14 Tools Available for 100 Different Jobs

Each tool designed specifically for use with the Big Bully. Blanks available for use in making tools of your own design.

- Scaling Tool
- Routing Chisels
- Flat Chisel
- Peening Tool
- Finishing & Forming Tool
- Star Drills
- Oil Grooving Chisel
- Sheet Metal Cutter
- Panel Cutter
- Spoon Face Chisel
- Gouge
- Wood Chisel
- Wedge Driver
- Paint Scraper

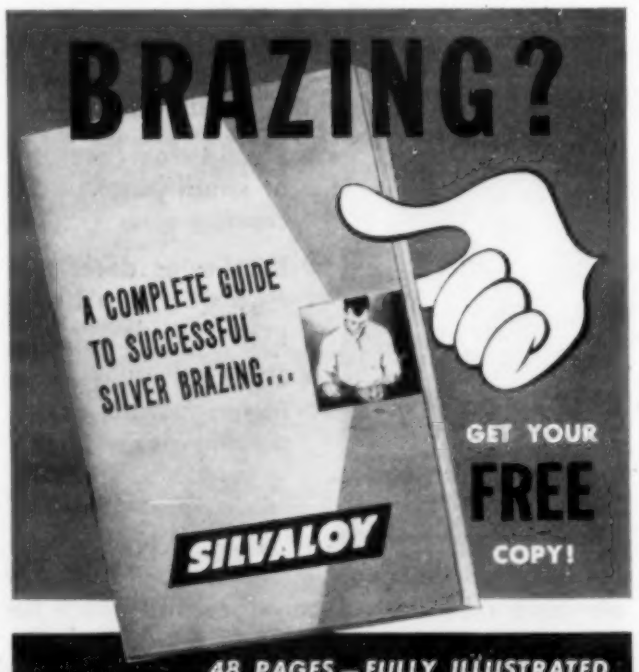
15 DAY FREE TRIAL

Only you know all the operations within your firm where this tool could help cut cost and speed up production. During this 15 Day Trial period you can experiment with the Big Bully to determine whether it fills your requirements. Send request on your purchase order or write for further information to . . .

SUPERIOR Pneumatic and Manufacturing, Inc.
4758 WARNER ROAD • CLEVELAND 25, OHIO

If you write maker identify as IEN - 2116

BRAZING?



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48 PAGES — FULLY ILLUSTRATED

Get this compact library of brazing data hat every design and production engineer — every brazing technician and buyer of brazing materials should have! It is the most complete guide available. Send for your free copy today.

THE AMERICAN PLATINUM WORKS
231 New Jersey Railroad Avenue • Newark 5, N. J.

If you write maker identify as **IEN - 2117**

WAYNE *Production-Booster* HOSE REELS

EASY TO USE: Pull tool or spray gun to required hose length . . . it locks firmly. Slight pull releases catch and hose rolls back automatically to predetermined setting—just like a window shade!

HANDY TO USE: Tools are out of the way but always within easy reach. Mounts in any position, permits centrally located tool for use by several operators, or one. Saves working space, too.

WORK-SAVING: Cuts waste motion, lessens worker fatigue, widens work-radius. Finger-tip control of tools. Quick installation, easy adjustment, simple maintenance.

Besides all this, the Wayne Hose Reel saves wear and tear on your hose, reduces drop-breakage of tools, prevents accidents caused by loose hose.

Write for illustrated data folders on cost-cutting, job-engineered Wayne Production-Booster Hose Reels.

Compare These Wayne Advantages

Automatic Rewind	Rugged Steel Construction
Rubber Bumper Stop	Open or drum-type Models
Hose I.D. Sizes, ¼", ⅜", ½"	Automatic Brake
Powerful Spring Motor	Universal Bracket
Constant Spring Tension	Hose Lengths, 15' to 50'

INDUSTRIAL HOSE REELS for Air, Water, Grease, Oil, Fluids

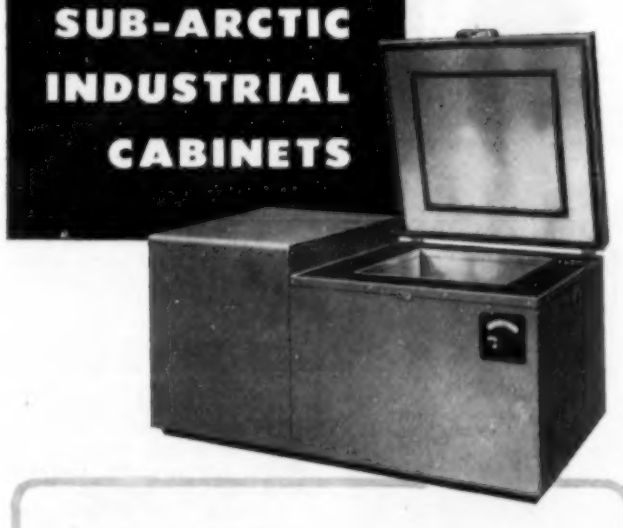
Wayne — NATION WIDE SERVICE

THE WAYNE PUMP COMPANY
SALISBURY, MARYLAND
TORONTO, CANADA

If you write maker identify as **IEN - 2118**

Tenney

SUB-ARCTIC INDUSTRIAL CABINETS



control cold for...

METAL TREATING	RESEARCH & PRODUCTION TESTING		
Quick-Aging	Products	to determine	Characteristics
Stabilization	Metals		Tensile Strengths
Stress	Rubber		Magnetic Conduction
Equalization	Plastics		Brittleness
Shrink-Fitting	Electronic Equipment		Contraction
Hardening	Instruments		Viscosity
Super-Hardening	Lubricants		Corrosion
Tool Steel	Cameras		Longevity

PLUS STORAGE & PRESERVATION
of Chemicals, Biologicals, and Serums

Tenney Sub-Arctic Industrial Cabinets are adaptable to all these important applications—wherever low temperature refrigeration with constant control, rapid pull-down, reliability of operation, and minimum maintenance are essential to operations. There are 28 models available in standard and special units in 1, 4, 6, 9, and 12-cu. ft. capacities, either air- or water-cooled. And for low temperature points, there is a range of six ratings: −40, −80, −100, −120, −150, and −170° F.

For features, specifications, and optional equipment, write for Sub-Arctic Bulletin.

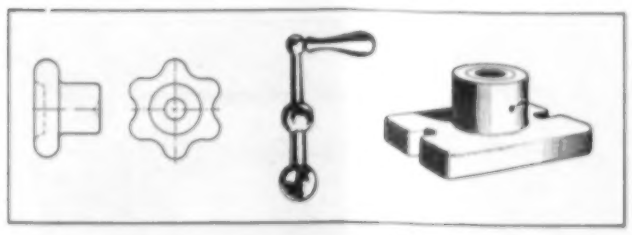
2455

Tenney ENGINEERING, INC.
Dept. C, 1090 Springfield Rd., Union, N. J.
Plants: Union, N. J.; Newark, N. J.; Baltimore, Md.
Los Angeles Representative: George Thorson & Co.
Engineers and Manufacturers of
Automatic Environmental Test Equipment

If you write maker identify as **IEN - 2120**

MACHINE PARTS . . Knobs, hand wheels, balanced cranks, levers, washers

Source: GEORGE F. BUB & SON
7413 Lanier Drive, Dept. IEN, Cleveland 30, Ohio



Catalog 52

The company announces availability of its line of ¾ to 3½-in. hand knobs in both aluminum and cast iron as an addition to its line of machine parts including hand wheels, spherical washers, balanced cranks, compound rests, clamping levers, quarter-turn screws, locating keys, jig feet, C-washers, machine handles, shank holders.

The knobs list at 8 to 50 cents each in cast iron and from 20 cents to $1.25 in aluminum in the overall range between ¾ and 3½ in. in greatest diameter. The company has prepared a catalog containing illustrations and specifications of each item in the line.

If you write maker identify as **IEN - 2121**

SIGNALING . . Power megaphone for construction, noisy locations

Source: NATIONAL SERVICE SALES CORP.
381 Fourth Ave., Dept. IEN, New York 10, N. Y.

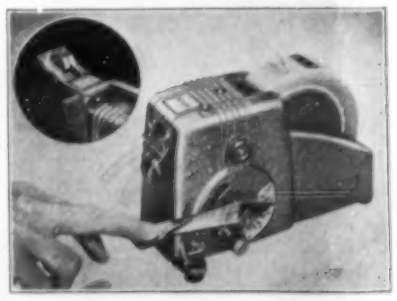
About $50

Commander is a new battery operated electronic megaphone employing a microphone and loudspeaker to amplify a user's spoken words. It can be heard clearly at several hundred yards away. The unit weighs 2¾ pounds. It measures 15 in. in length by 9½ in. in largest diameter. It is weather sealed against salt spray and corrosion. It is finished in brown hammertone enamel and is supplied with a shoulder strap and an extra battery set.

If you write maker identify as **IEN - 2122**

DISPENSING . . Lever operated unit feeds and also slits cellophane tape

Source: PERMACEL TAPE CORP.
Highway One, Dept. IEN, New Brunswick, N. J.



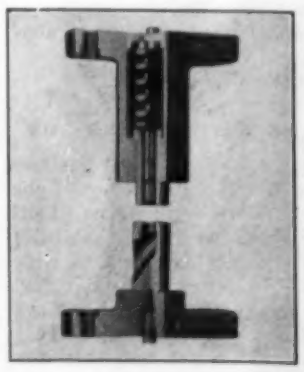
Scale shows length

Model T-5E Texcel is a new cellophane tape dispenser that can be set to deliver lengths to 4 in. from a roll of tape measuring to 1 in. in width. A hinged section, in the top of the housing, carries a razor blade that will slit the tape as it issues from the dispenser. An extra blade is taped inside the base. An over-ride permits pull withdrawal of any tape length. Weight is 6¾ pounds.

If you write maker identify as **IEN - 2123**

PRESS TOOLS . . Punch and die unit to ⅞ in. in ¼ in. mild steel

Source: WALES-STRIPPIT CORPORATION
361 Payne Ave., Dept. IEN, North Tonawanda, N. Y.



Catalog "JD"

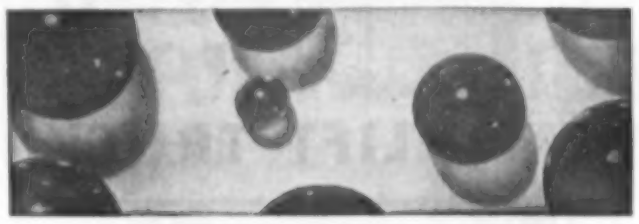
Type JD designates a new self-contained assembly of punch, die and stripper spring to mount in die sets and apply in a press in the same manner as conventional dies. The units mount directly to standard flat surface die sets or on templates which are then mounted into the die sets. The template method permits changing setup by removing one pair of templates and replacing them with another.

The units are self-aligning so no time is required for this critical operation. Only one press ram adjustment is required due to the uniform shut height. Two holder sizes are available to punch round or shaped holes to ⅞ in. in diameter.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as **IEN - 2124**

NOW — Precision Balls of Synthetic Sapphire



These balls of synthetic sapphire, polished to within 20 micro-inches of sphericity, are resistant to wear, heat, and corrosion. In many applications they need not be lubricated.

Available in 1mm, 1/16 inch, ⅛ inch, and ¼ inch sizes, and in three surface finishes.

PROPERTIES

Coefficient of Friction	0.140
Hardness (Knoop)	1525-2000
Dielectric Constant	7.5-10
Modulus of Rigidity	21.5-27.5 x 10^6 psi
Thermal Coefficient of Expansion at 50°C (per°C x 10^6)	5.0-6.7
Chemical Resistance	Unaffected by acids, dilute alkali.

Call or write any LINDE office for information on these balls or the other forms of synthetic sapphire.

LINDE AIR PRODUCTS COMPANY
A Division of Union Carbide and Carbon Corporation
30 East 42nd St. UCC New York 17, N. Y.
In Canada: Dominion Oxygen Company, Limited, Toronto

If you write maker identify as **IEN - 2125**

Simpson Model 260

VOLT-OHM-MILLIAMMETER
$38.95 Dealer's net.

USE IT FOR:

- TV SETS
- RADIOS
- TRANSMITTERS
- BROADCASTING EQUIPMENT
- HOME APPLIANCES
- TWO-WAY RADIO COMMUNICATIONS SYSTEMS
- PHONE LINES
- AIR CONDITIONING SYSTEMS
- STARTER CONTROLS
- AUTO IGNITIONS, GENERATORS, BATTERIES
- MOVIE EQUIPMENT
- PANEL INSTRUMENTS
- TV CAMERAS
- AUTO LIGHTING SYSTEMS
- GENERATORS
- VOLTAGE SOURCES
- "HAM" RADIO EQUIPMENT
- CABLES
- CONNECTORS
- AUDIO FREQUENCY SOUND CURRENTS

. . . and write for your complimentary copy of "1001 Uses for the Simpson Model 260" 50 pages of uses.

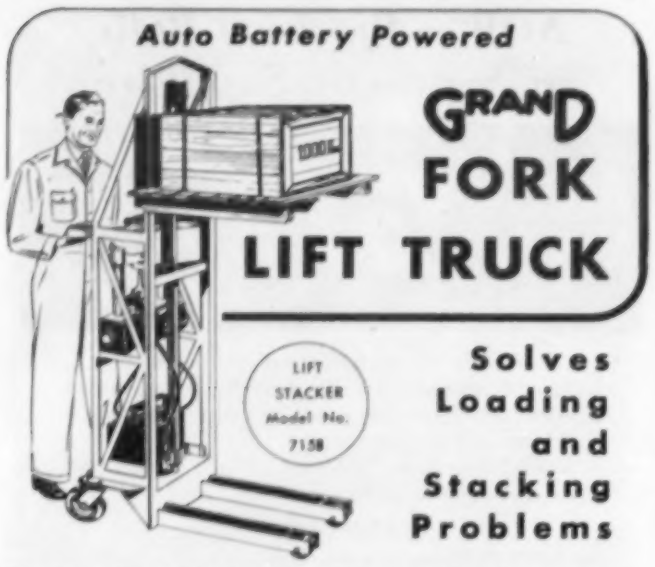
BEST ALL-AROUND TESTER ON THE MARKET

BEST ALL-AROUND TESTER ON THE MARKET

RANGES:
20,000 OHMS PER VOLT DC
1,000 OHMS PER VOLT AC
VOLTS, AC AND DC: 2.5, 10, 50, 250, 1,000, 5,000
OUTPUT: 2.5, 10, 50, 250, 1,000
MILLIAMPERES, DC: 10, 100, 500
MICROAMPERES, DC: 100
AMPERES, DC: 10
DECIBELS (5 RANGES): −12 TO +55 DB.
OHMS: 0-2000 (12 OHMS CENTER), 0-200,000 (1,200 OHMS CENTER), 0-20 MEGOHMS (120,000 OHMS CENTER)

SIMPSON ELECTRIC COMPANY
5200 W. Kinzie St., Chicago 44 • EStebrook 9-1121
In Canada: Bach-Simpson, Ltd., London, Ont.

If you write maker identify as IEN - 2127



The New Grand Lift Stacker, a hand truck with an electric-hydraulic lift system, takes all the slow, back breaking work out of loading and unloading trucks, moving and stacking crates, boxes, kegs and other heavy objects.

They are ideal for use on low load limit floors and in narrow aisles. Lift stackers are available in capacities up to 3000 lbs. and in lifting heights up to 98 inches in both electric and 4 speed manual hydraulic lift models.

HAVE A DEMONSTRATION IN YOUR PLANT TODAY

ALLIED MFG. & SALES CO.
201 N. WELLS · CHICAGO 6, ILL.

If you write maker identify as IEN - 2128

standard O-M CYLINDERS air hydraulic

easily and quickly modified to fit

You don't pay for special patterns . . . and you don't have to use a cylinder that's not quite "right" for the job when you choose the O-M Cylinder. Since nearly all parts are standardized in O-M Cylinders (plus one or two semi-standard parts), the additional cost is extremely small when you need a duplex, triplex, adjustable-stroke, tandem—or any other "special" type cylinder for applications not suited to standard units.

fit where others won't!

O-M Cylinders require ⅓ *less installation space* than conventional cylinders of the same bore because O-M's SPECIAL INTERLOCKING MECHANISM does away with projecting tie rods and end caps. Also provides better balance, reduces distortion . . . giving O-M the *lowest coefficient of friction of any cylinder.* End plugs tapped for universal mounting. Any one or combination of mounting brackets may be used to install without disassembling or changing cylinder. Easily removed, inspected, repaired. ALL-STEEL with bearing bronze—no castings.

Available in a full range of sizes (1½ to 8" bores) with standard, 2 to 1 or oversize rods. Completely interchangeable parts.

Write today for FREE catalog and complete set of ½- and ¼-scale templates showing all cylinders and mounting brackets.

14 day delivery on most sizes

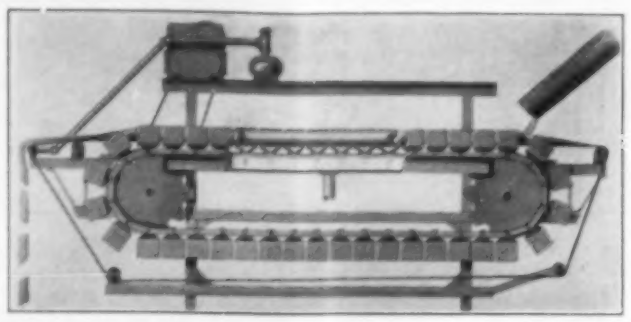
MAIL COUPON TODAY!

ORTMAN MILLER MACHINE CO.
1208 150th Street • Hammond, Indiana
☐ Please send latest O-M catalog. ☐ Complete set of templates.
Name.....
Company.....
Address.....
City..... Zone..... State.....

If you write maker identify as IEN - 2130

FILTERING . . Belt type equipment to remove liquids from solid materials

Source: HARDINGE COMPANY
240 Arch St., Dept. IEN, York, Pa.



Bulletin AH-450

Cloth belt acts as the filter medium in this new Tray Belt Filter. It rides in a closed circuit on a set of connected traveling perforated trays. These trays curve the belt into a trough on the top horizontal run. The belt leaves the trays at one end, moves downward to a straight return idler across the bottom, then up on additional idlers to return to the entering side.

Raw liquid-solids mixture is fed by gravity. The liquid is pulled down through the belt by the action of the suction box beneath the trays on the upper run. The dewatered filter cake drops from the discharge end with the aid of air jets.

Washing action can be combined with filtration by using water sprays above the belt. Counter current washing can be obtained by sectionalizing the suction box and reusing the wash water from each section in successive sprays approaching the feed end.

Typical applications are in washing grains and salts, by direct or counter current action, by filtering solids not readily maintained in fluid suspension prior to filtering, such as coarse sand or material devoid of sporting slimes. The equipment is not recommended for filtering slimes or materials requiring a long filter cycle.

If you write maker identify as IEN - 2131

MOTORS . . Induction design ac., in new NEMA frame sizes, 1 to 2 hp.

Source: A. O. SMITH CORPORATION
Box 584, Dept. IEN, Milwaukee 1, Wis.

Details on request

Rolled steel main frame with malleable iron base and cast iron end frames make up the exterior of the company's new line of motors in frames 182, 183, 203 and 204 with ratings at 1, 1½ and 2 hp. These motors are ready now and will be followed shortly by the next frame diameter which will include No. 213 to 225 in 3 and 5-hp. ratings.

Cooling fans, the diameter of the rotor, are mounted on the shaft. The blades are cast integral with pressure cast end rings and rotor bars. The shaft is mounted on ball bearings. The new line supplements the company's present line which includes ratings from ¼ to 150 hp. in standard and special designs and mountings.

If you write maker identify as IEN - 2132

BEARING . . Straight roller design employs machine shaft as the inner race

Source: ROLLWAY BEARING CO.
542 Seymour St., Dept. IEN, Syracuse 4, N. Y.

Tru-Roll design

Type 1207-B is a straight roller design in the company's line. It is available without the inner race to mount directly on a machine shaft. The bearing measures 2.8346 in. in outside diameter. Shaft diameter is maximum at 1.7322 inches. Recommended load capacity at 100 rpm. is 3,560 pounds.

The assembly consists of the outer race, a one-piece steel retainer that is held in place by snap rings and the complement of hardened steel rollers. Load capacity is based upon a shaft hardness of 56 to 60 on the Rockwell C. scale.

If you write maker identify as IEN - 2133

Self-adhesive label, particularly for file folders, has been added to the line manufactured by Avery Adhesive Label Corp., Dept. IEN, Monrovia, Calif. It is supplied in white stock sheets with a backing sheet over the adhesive. It is typed and then torn into ⅝ by 3½-in. units. The backing sheet is removed and the label applied without need for moistening.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 2134

• RIGID-TEX METALS are three-dimensional, design-strengthened and textured to conceal all dents, scratches, doodles and scuffs—a feature that reduces maintenance costs considerably in an unlimited variety of product applications. Other features: added rigidity; reduced gages for *metal conservation;* impact resistance; buckling strength; glare resistance; versatile fabrication.

NEW 16-PAGE CATALOG available upon request. WRITE on your company letterhead for your copy.

RIGIDIZED METALS CORPORATION
6642 Ohio Street Buffalo 3, N. Y.
50 Warehouses and Sales Representatives in all Principal Cities throughout the U.S. & Canada
U.S. and Foreign Patents

If you write maker identify as IEN - 2135

Here's a small high vacuum pump with BIG CAPACITY

CVC's type MB-10 two-stage Oil Diffusion Pump produces vacuums up to 2×10^{-6} mm Hg at speeds up to 10 liters per second.

Its small size (only 6⅜" high) and outstanding performance characteristics particularly recommend it for exhausting standard electronic tubes, sealed relays, vacuum condensers, instrument control elements, and other small volume vessels.

A new Data Sheet gives complete operational and dimensional information. We would be pleased to send you a copy or to discuss any problem you have that might involve the creation, measurement or use of high vacuum.

Write *Consolidated Vacuum Corporation, Rochester 3, N. Y.* (a subsidiary of Consolidated Engineering Corporation, Pasadena, California)

CVC

Consolidated Vacuum Corporation
Rochester 3, N. Y.
designers and manufacturers of high vacuum equipment
SALES OFFICES: Palo Alto, Calif. • Chicago, Ill. • Camden, N. J. • New York, N. Y.

If you write maker identify as IEN - 2136

***fabricated from* POLYPENCO® / nylon shapes**

Immediate delivery of POLYPENCO nylon rod, tubing, strip and slab. We'll help you fabricate.

- Make one part or hundreds economically on standard metalworking tools
- Reduce wear on gears, bearings, gaskets, cam followers, etc.
- Eliminate lubrication
- Eliminate corrosion on exposed surfaces
- Eliminate backlash and noise
- Get top performance in every part with quality-controlled Polypenco nylon shapes

POLYPENCO NYLON WRITE FOR GENERAL BULLETIN

nylon and Teflon*—other non-metallic/stock shapes
finished parts also available to your specifications
The POLYMER CORPORATION of Penna. • Reading, Penna.
*trademark for Du Pont tetrafluoroethylene resin

If you write maker identify as IEN - 2137

BREEZE Job-Engineered BELLOWS

ANOTHER BREEZE MARK PRODUCT

...Give LASTING PROTECTION Where Ordinary Bellows Fail

Breeze welded diaphragm bellows meet the operating life cycle of any equipment in which they are used *because every Breeze bellows design is individually engineered and built for the job.*

Breeze has no "stock bellows," but if you have a vibration problem in ducts, large or small, or want permanently sealed valve enclosures in any type of piping system, or need bellows for torque transmission or other uses, Breeze experience can quickly provide the answer . . . and production can meet your requirements.

A Breeze bellows is dependable because each diaphragm is designed to work well within its elastic limit. This is accomplished by thorough analysis of each application and careful design of the bellows to withstand all requirements. "Job engineering" each individual type eliminates makeshifts, assures efficient performance.

Breeze bellows are made in stainless steel, inconel, monel, nickel, steel, or other weldable alloys.

Feel free to consult us without obligation on your existing bellows requirements, or any other project where reliable welded diaphragm type bellows might solve a design problem.

BREEZE CORPORATIONS, INC.
41-V S. Sixth St., Newark 17, N.J.

OTHER BREEZE PRODUCTS: ACTUATORS · RADIO SHIELDING · AERO-SEAL HOSE CLAMPS

If you write maker identify as IEN - 2138

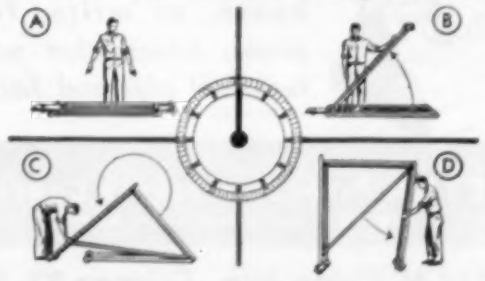
25 ft. "UP-RIGHT" SCAFFOLD-ON-WHEELS

Set up in only 5 minutes!

As if by magic, an aluminum alloy tower of any height desired is ready in minutes! Individual scaffold sections are set one on top of the other. Sections lock into place instantly. The tower rolls down aisles . . . straddles machinery.

HERE'S THE SECRET!... Patented ONE-PIECE SECTIONS

Each one-piece section is unfolded by one man in less than a minute! No tools, wing nuts or bolts.



WRITE FOR DESCRIPTIVE BULLETIN

"UP-RIGHT" SCAFFOLDS
DEPARTMENT 142 · 1013 PARDEE STREET · BERKELEY, CALIFORNIA
Factories: Berkeley, Calif. and Teterboro, N. J.
Offices in all principal cities

If you write maker identify as IEN - 2140

GAGE . . Internal comparator reads over and under a master setting

Source: PORTAGE DOUBLE QUICK TOOL CO.
1034 Sweitzer Ave., Dept. IEN, Akron 11, Ohio

For production use

Diameter range is ⅜ to 6 in. with this Interapid comparator. It is adjusted initially by turning a knob on the housing base and is set with gage blocks, a master ring gage or a micrometer. A small locking lever, on one arm, retracts the contact point to enter a work piece.

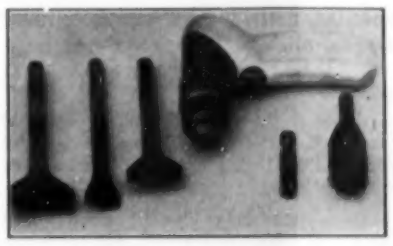
The reading on the scale shows whether the dimension is over or under the master setting. The scale is marked off in 0.0005-in. divisions. The measuring tips are located at extreme ends of arms so it is possible to check shallow counterbores of 1/16 in. or more.

Two sets of centering arms snap on and off. These arms are employed in checking the larger diameters. They provide a 3-point contact on one arm to assist in locating the center of a bore in a work piece.

If you write maker identify as IEN - 2141

HAMMER . . Portable pneumatic kit includes the hammer and five tools

Source: SALSBURY CORPORATION
1161 E. Florence, Dept. IEN, Los Angeles 1, Calif.



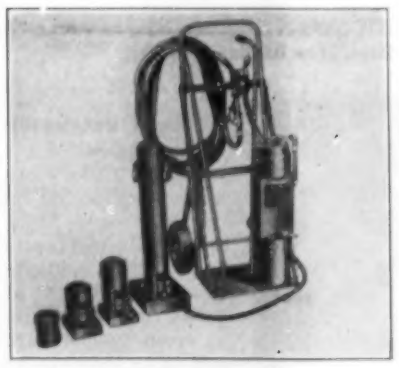
6,000 blows per minute

Four new kits, employing the company's 26-oz. air hammer, are available for general maintenance, marine maintenance and for foundry and welding operations. Each kit includes the tools particularly designed for the given application. The hammer can be assembled for straight or 90-deg. angle operation. The latter is shown in the illustration. Air consumption is 5 cfm. at 100 pounds.

If you write maker identify as IEN - 2142

JACK . . Air hydraulic equipment, with four 30 ton rams, truck and pump

Source: DUFF NORTON MFG. CO.
2709 Preble Ave., Dept. IEN, Pittsburgh 30, Pa.



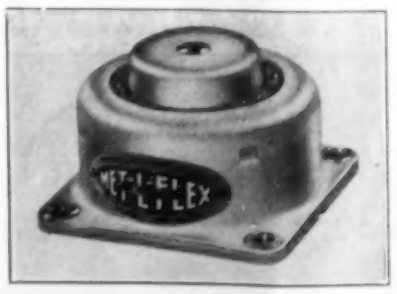
Safe to operate

Air operated hydraulic pump mounted on a hand truck is equipped with 50 ft. of ½-in. hose for air line connection and 6 ft. of flexible hydraulic hose for use between the pump and any one of four 30-ton rams. The smallest measures 4½ in. in length retracted. The largest measures 28 inches. Stroke is 2 to 20 inches. Operation is on 80 to 100-lb. air.

If you write maker identify as IEN - 2143

ISOLATING . . Vibration insulator employs resilient metal mesh pads

Source: ROBINSON AVIATION INC.
Teterboro Airport, Dept. IEN, Teterboro, N. J.



Permanently elastic

Inverted cup, at the top center of this new Model 1202 isolator, is made of stainless steel and is carried on a Met-L-Flex pad fabricated from knitted stainless steel wire. This pad carries the static and dynamic loads and provides vibration isolation. The cup is flanged outward and the flange is mounted between two auxiliary pads of the same material to provide gradual increase and stiffness, plus damping, for positive, negative and radial motion limitation as well as shock dissipation.

Base dimensions are 2⅜ by 2⅜ inches. Maximum height is 1½ inches. Minimum height is 1⅛ inches. Four ratings take loads from 2½ to 40 pounds.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 2144

Tough! Flexible! Fire Resistant!

U. S. ROYAL CORDS AND CABLES

For light, power and control applications, United States Rubber Company offers a complete line of electrical conductors, power cables, flexible cords, flexible power cables, signal and communication cables.

For more information write the nearest U. S. Rubber Branch or the address below.

UNITED STATES RUBBER COMPANY
Electrical Wire and Cable Department, Rockefeller Center, New York 20, N. Y.

If you write maker identify as IEN - 2145

—through your Goodyear Dealer—distributor of America's largest line of Industrials

Here's a way you can get the long-term savings of job-fitted tires for your plant operation—and do it at regular industrial tire prices. Call in your Goodyear Dealer.

He can fit your needs from over 100 different solid tire types and sizes plus a full line of pneumatic and semi-pneumatic industrials.

In addition, he will recommend the tread and tire compound which best suit your floor surfaces—whether they're rough, smooth, wet, or oil-slicked.

And thanks to the convenient location of Goodyear warehouses, your Goodyear Dealer can promise quick delivery on your order.

So get acquainted with your Goodyear Dealer soon. Let him help you select the industrial tires for your particular needs.

Solid Facts for Solid Users

Did you know

—that you can get chip-resistant UN Compound or oil-, acid-, and chip-resistant OR-Compound at no extra cost?

—that many sizes of steel wheels can now be converted to easy-rolling, floor-saving Goodyear "molded-ons"?

Call your Goodyear Dealer for details or, for the name of your nearest dealer, write Industrial Tire Dept., Goodyear, Akron 16, Ohio.

GOODYEAR
INDUSTRIAL TIRES
All-Weather—T. M. The Goodyear Tire & Rubber Company, Akron, Ohio

If you write maker identify as IEN - 2147

Goulds Fig. 3742—Sizes 1" and 1¼". Capacities to 110 G. P. M. Heads to 120 ft.

New Goulds "support head" centrifugal pump

for AIR CONDITIONING installation

This compact Goulds pump saves space, cuts costs. It's designed especially for air conditioning installations, but also offers advantages for other services.

FLEXIBLE—Discharge may be located in any one of eight positions. May be driven by belt or directly connected to motor or other driver.

COMPACT—You can fit this pump unit into virtually any layout.

QUIET—Balanced impeller assures minimum noise and wear.

SIMPLE—Mechanical seal prevents leakage, but does not bind shaft or require adjustment or periodic maintenance. Vertically split casing permits inspection without disturbing piping connection.

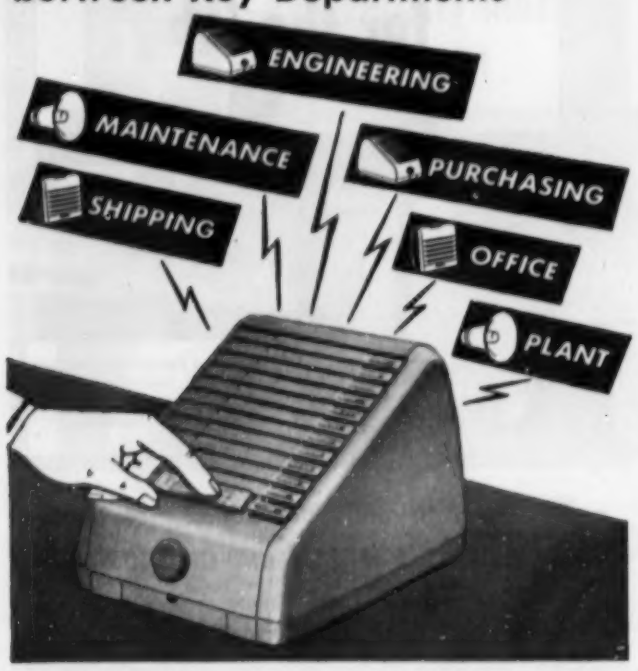
For full details, specifications, performance curves, send for Bulletin 625A3.

Goulds PUMPS INC. Seneca Falls New York

If you write maker identify as IEN - 2148

Step Up Production

with faster communication between Key Departments



EXECUTONE Intercom puts every department at your fingertips—*instantly!*

Production moves faster when you don't have to wait for information. With Executone you talk to any department, anywhere in your office or plant—*instantly!* No time lost running back and forth. No waiting on "busy" inside phones. You get more work done—*faster!*

In the NEW Executone voices are amazingly crisp and clear. Installed and serviced by Executone-trained technicians. Low cost Executone soon pays for itself in dozens of ways.

Executone INTERCOM SYSTEMS

GET THE FACTS

EXECUTONE, INC., Dept. L-4
415 Lexington Ave., New York 17, N. Y.

Without obligation, please send me full data on Executone Intercom. I am particularly interested in:

- ☐ INTER-OFFICE COMMUNICATION
- ☐ INTRA-PLANT COMMUNICATION
- ☐ MATERIALS HANDLING CONTROL
- ☐ SWITCHBOARD RELIEF
- ☐ INVENTORY CONTROL
- ☐ LOCATING PERSONNEL

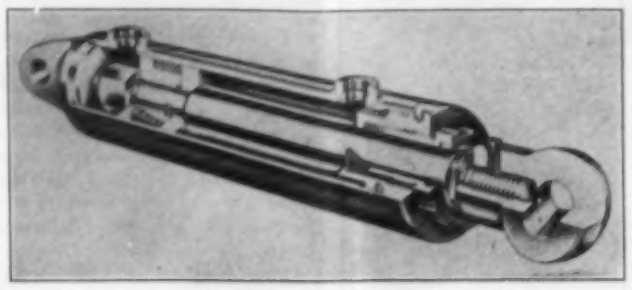
Name.....Title.....
Firm.....
Address.....City.....

In Canada—331 Bartlett Ave., Toronto

If you write maker identify as IEN - 2150

CYLINDER . . Double acting hydraulic, 1½ to 8 in., oil to 1,000 pounds

Source: NEW YORK AIR BRAKE CO.
1100 E. 222nd St., Dept. IEN, Cleveland 17, Ohio



Clevis mounting

Polished, chromium plated piston rod and honed bore, with V-type packings on the piston and the rod, characterize the construction of this new double acting design in the company's Hydreco line of hydraulic cylinders. A wiper ring at the throat keeps dirt out of the interior and protects the packing. O-rings are employed at the points of static sealing.

Twelve sizes have effective diameters at 1½ to 8 inches. Stroke can be specified. The new units are in addition to the previously developed line of single-acting cylinders covered by the company's Bulletin 138.

If you write maker identify as IEN - 2151

CLEANING . . Portable vacuum machine for wet or dry use has 1 hp. motor

Source: CLARKE SANDING MACHINE CO.
Dept. IEN, Muskegon, Mich.

Removable head

Porta-Vac Model BWD-18 is a new portable machine in the company's line of vacuum cleaning equipment. The universal 1-hp. motor and its direct connected blower apply as a unit on the housing top. This unit can be removed and carried by the operator. It can be set up for either vacuum or blowing application. The motor has a polished aluminum housing. The caster mounted housing is finished in baked enamel. Attachments are available.

If you write maker identify as IEN - 2152

ADHESIVE . . Silicone resin to make light but strong laminations

Source: DOW CORNING CORP.
P. O. Box 592, Dept. IEN, Midland, Mich.

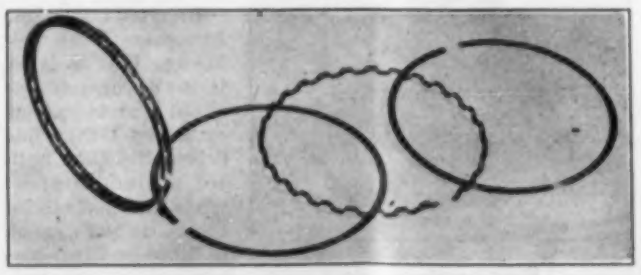
Preliminary Data 10-231

The illustration shows sections of low pressure glass cloth laminates bonded by the company's new No. 2106 silicone resin. Tests indicate flexural strength of 50,000 lb. per sq. in. at room temperature and 12 to 15,000 lb. at 500 deg. F., after curing for 6 to 12 hr. at 480 deg. F. Tensile strength is 40,000 lb. per sq. in. at room temperature and 30,000 lb. at 500 deg. F.

Laminates, bonded with the new resin, are water repellent and resistant to attack by most common inorganic reagents. Heat resistance and dielectric properties qualify them as Class-H insulating materials in AIEE Standards No. 1.

If you write maker identify as IEN - 2153

Special adhesive was required by Muskegon Piston Ring Co. to hold the three component parts of a new oil ring to-



gether for assembly in its groove in a gasoline engine piston. It was essential that the adhesive dissolve in the engine lubricating oil and disappear after a short period of engine service. Minnesota Mining & Mfg. Co., 423 Piquette Ave., Dept. IEN, Detroit 2, Mich., developed the adhesive and the new ring has gone into production. The adhesive is a flexible rubber-base oil soluble material. It dissolves completely and disappears within 300 to 500 miles of driving.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 2154

LAWLOR MOP WRINGERS

FOR EASIER MOPPING GET A LAWLOR NO. 2

EASIEST turning wringer made: there are bearings at ends of rollers.

EASY to bring rolls together: foot lever is perfectly balanced.

Copied but never duplicated!

EASY to move wringer; self-adjusting front casters raise metal feet from floor when you're ready to go.

The **LAWLOR No. 2** accommodates any standard round, galvanized pail up to 16-quart capacity. Net weight of wringer—23 pounds.

LAWLOR No. 6 TWIN is like the No. 2 Wringer in general construction, but accommodates two pails.

Write for Catalog of Mopping Tools, Wringers, Floor Scrub Wax-Polishing Machines for every kind and size floor.

S. C. LAWLOR CO.
120 North Aberdeen Street • Chicago 7, Illinois

Visit our Exhibit, N.S.S.A. Convention, Booth 98, Hilton Hotel, Chicago, Mar. 21-24

If you write maker identify as IEN - 2155

AETNA has every kind of plywood you're likely to need

It's a safe bet, whatever your plywood requirements may be, you can satisfy them with AETNAPLY Plywood. It is available in any grade, thickness, size you want.

That's not only handy but advantageous, ***one*** reliable source, ***one*** undivided responsibility, ***one*** well-known standard of quality and uniformity.

Complete technical and fabricating data—engineering help, too—are yours for the asking. Just keep AETNAPLY in mind when you're in the plywood market. And remember, wherever you use it, AETNAPLY plywood looks better, lasts longer, works out better in the long run.

Call your nearest AETNA office or branch warehouse, or write, for prices, information and technical plywood help.

AETNA PLYWOOD & VENEER COMPANY
PLYWOOD for every purpose — every industry

1724 N. Elston Ave., Chicago 22, Ill.
ARmitage 6-7100

BRANCH WAREHOUSES: Grand Rapids 7, Mich.; Indianapolis 2, Ind.; Rockford, Ill.; Detroit 9, Mich.

If you write maker identify as IEN - 2157

For versatility unlimited—

it's the K series

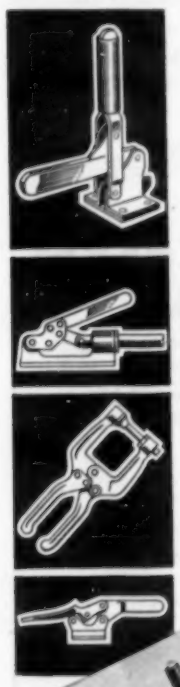
Rugged construction and the wide range of sizes, shell designs, and contact arrangements in the Cannon Electric K and RK Series are responsible for their wide use throughout aircraft, radio, and the electronic industries. Eight basic shell designs and over 190 different contact arrangements are available. In addition, some K types are especially designed for hermetic sealing, pressurization and for aircraft firewall applications, utilizing Acme threaded quick-disconnect coupling nuts. Current ratings to 200 a maximum. Maximum flashover value 4,300 v ac. Many accessories, including integral clamps and dummy receptacles are available.

For engineering data, write for K Bulletin. For a general survey of entire Cannon line, request Cannon Plug Guide.

CANNON ELECTRIC
Since 1915

CANNON ELECTRIC COMPANY, LOS ANGELES 31, CALIFORNIA
Factories in Los Angeles, Toronto, New Haven. Representatives in principal cities.
Address inquiries to Cannon Electric Co., Dept. 112 Los Angeles 31, Calif.

If you write maker identify as IEN - 2158



WESPO

TOGGLE CLAMPS

Hardened steel bushings and pins provide for longer wear—eliminate elongated holes and pin shearing.

A CLAMP FOR EVERY WORK HOLDING NEED

35 Sizes Available

WESPO TOGGLE CLAMPS are engineered and constructed for positive holding and light, medium and heavy clamping.

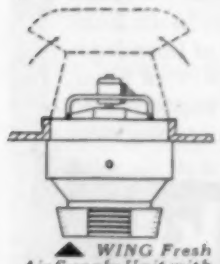
Write for Free Template Catalog

West Point Mfg. Co.
26941 W. SEVEN MILE RD.
DETROIT 19, MICHIGAN

If you write maker identify as IEN - 2159

Is Your Factory Starved for AIR?

If this is what happens when you go from the office into the shop, your plant is *starved for air!* Vacuum from exhaust equipment is usually responsible. While our pictures may be slightly overdrawn, something like that may be happening in your plant.



▲ *WING Fresh Air Supply Unit with fan above roof line.*

If your building is not new, the vacuum may be relieved by crevices, windows, and loose-fitting doors admitting much unheated air, rendering your heating system entirely inadequate. If the building is air-tight, the ventilating system won't work properly, unless make-up air equally replaces exhaust air.

Here's an easy solution. Install WING FRESH AIR SUPPLY HEATERS with Revolving Discharge Outlets. In winter they bring in fresh air with controlled temperatures, replacing exhausted air. In summer, with the steam shut off, fresh air is circulated, keeping workers cooled and production up to par in stifling weather.

L. J. Wing Mfg. Co. 160 Vreeland Mills Rd., Linden, N. J.

If you write maker identify as IEN - 2160

TRACTOR . . Motor driven assembly provides three free speeds to 9.4 mph.

Source: YALE & TOWNE MFG. CO.
11000 Roosevelt Blvd., Dept. IEN, Philadelphia 15, Pa.

For restricted areas

A third speed, that doubles the previous maximum speed of 4.7 mph., has been added to the company's Worksaver tractor. The new speed is selected, with the operator riding in seated position, when he presses a spring loaded floor button. The drive returns to the previous high speed of 4.7 mph. when this button is released or to 2.5 mph. when a cam is operated on the handle.

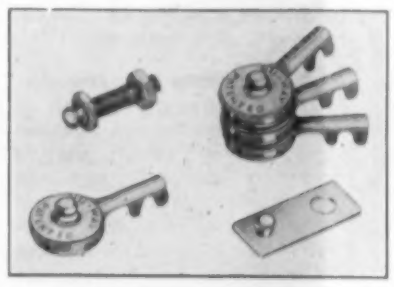
Tractive rating is 200 lb. normal, 700 lb. maximum. Low speed is at 2 mph. with the intermediate speed at 4 mph. and high speed at 8 mph., with a trailer carrying a 1-ton load.

The tractor can make a right angle turn in a 58-in. aisle and can turn a right angle corner in aisles measuring 44 in. in width. It employs two 6-cell 13-plate batteries in parallel for two of the speeds and in series for the third. Overall dimensions are about 48 in. in length by 33 in. in height. The handle stands 50 in. above the floor in raised position.

If you write maker identify as IEN - 2161

CONNECTOR . . Electric terminals clamp on wire ends and snap together

Source: JOHN MARSHALL ASSOCIATES
Box 2463, Dept. IEN, Bridgeport 8, Conn.



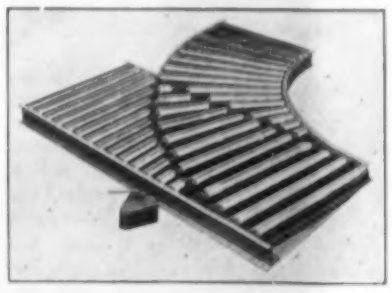
For quick assembly

Nu-Way is a new nickel plated brass terminal measuring 7/16 in. in head diameter by 7/8 in. in length. Finger lugs clamp around a bare wire end and can be soldered in place. The heads snap together to make good flexible electric contact. The three basic parts, shown in the illustration, include a base plate, the terminal unit and a mounting stud.

If you write maker identify as IEN - 2162

CONVEYING . . Switch section employs pivoted rollers in vee area

Source: MECHANICAL HANDLING SYSTEMS INC.
4600 Nancy Ave., Dept. IEN, Detroit 12, Mich.



Lever operated

Packages can be allowed to proceed along a straight line or can be diverted to a spur by positioning a set of pivoted rollers that cover a vee area of the straight run in this new switch section.

The section is available in various widths and weights of roller with diameters at 1¼ to 2 9/16 inches. It is made in right and left hand 45 and 90-deg. turns and in Y switches with 45 and 90-deg. changes in direction.

If you write maker identify as IEN - 2163

VALVE . . Lubricated plug design, grooved connection ends, 2 to 4 inches

Source: ROCKWELL MFG. CO.
624 N. Lexington Ave., Pittsburgh 21, Pa.

For water, oil, air

Nordstrom semi-steel lubricated plug valves are now available in 2 to 4-in. sizes with grooved connection ends for assembly in a line with grooved end couplings. Tight connection can be made quickly and lines can be taken apart without damage to the pipe, valve or coupling. Lines can be installed with deflection of several degrees at each joint. The couplings permit pipe expansion and contraction and isolate vibration. The valve, Figure 23144, is wrench operated and has a water pressure rating of 175 pounds.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 80

If you write maker identify as IEN - 2164

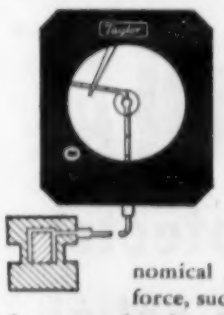
STAINLESS STEEL BELLOWS ASSEMBLIES . . . to your specifications

● Check with Fulton Sylphon specialists on your stainless steel (or other metal) bellows assemblies needs. Custom-made to your specific requirements—saving you time, trouble and money. Used in many industries, to help solve design problems involving control of temperature and pressure—for thermostatic devices, pressure controls, expansion joints, as flexible connectors, etc. Write for illustrated, idea-filled Catalog CN-1450

Robertshaw-Fulton
CONTROLS COMPANY

FULTON SYLPHON DIVISION KNOXVILLE 1, TENN.

If you write maker identify as IEN - 2165



Tricky load measurement problems?

Taylor Volumetric Load Measuring Elements provide a simple, economical means of directly measuring load or force, such as the tension on a conveyor belt, the thrust on a bearing, "nip" pressure on processing rolls, or the weight of solids or corrosive liquids in a tank for example.

There are four different types of rugged, self-contained units, to fit all requirements. The measurement is read directly on the chart or scale of a recording or indicating instrument.

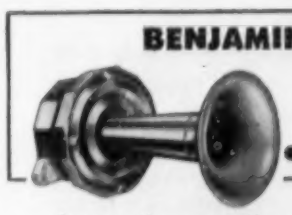
Illustrated above is the Spool Type Element, designed for measuring either tension or compression loads or a combination of both. The range limit for compression loads is 0-240,000 lbs., maximum load not to exceed 400,000 lbs. Tension loads can be measured from 0-30,000 lbs.

For full details call your Taylor Field Engineer, or write for **Bulletin 98232.** Taylor Instrument Companies, Rochester, N. Y., or Toronto, Canada.

Taylor Instruments
MEAN ACCURACY FIRST

If you write maker identify as IEN - 2166

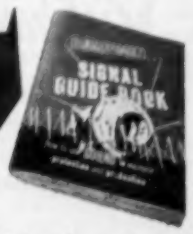
BENJAMIN SIGNALING EQUIPMENT



...via Graybar

Among the more than 100,000 electrical items distributed by Graybar is the complete line of Benjamin Signaling Equipment—Howlers, Buzzers, and Sirens, all built to meet the most severe service demands. And, you can get the help of an experienced Graybar Signaling Specialist in planning the system best suited to your needs.

***Free* Benjamin Signal Guide Book**



Here's one of the most complete books on sound signals ever published. Fully covers: fundamentals of sound—loudness, intensity, pitch . . . selection of signal equipment for any specific purpose . . . how to plan a complete sound signal system . . . descriptions and specifications of Benjamin Signaling Equipment. Send for your free copy, today. *Graybar Electric Co., Inc. Executive Offices: Graybar Building, 420 Lexington Avenue, New York 17, N. Y.* 411-122

Call Graybar *first* for . . . Everything Electrical GraybaR ELECTRIC COMPANY

If you write maker identify as IEN - 2167

Won't Smudge!

LABELON PLASTIC

RESISTS: DIRT GREASE WATER ACIDS

Write on it

TAPE

STICKS WITHOUT MOISTENING

LABELON TAPE sticks without moistening to any smooth, dry surface—yet strips off cleanly. Write or print on it with pencil, stylus or typewriter. Message WON'T SMUDGE . . . defies dirt, grease, water, acids . . . stays clean, easy-to-read—because writing surface is protected by transparent plastic! Available in rolls—or in flat form on backing sheets for typewriter use.

Use Labelon "Write on it" Tape to label stockroom shelves, bins, tools, hard-to-mark parts; for indicating rejects and service department repairs; for marking laboratory equipment, supplies, experiments; for panel boards or wiring; for office files, folders, etc.

For samples and prices, see your nearest dealer or write Dept. IEN-2

LABELON TAPE CO., INC.
450 Atlantic Ave., Rochester 9, N. Y.

If you write maker identify as IEN - 2168

tough VISQUEEN® film

sells as it protects!

protects as it sells!

Ideal material for packaging small parts, tools, gaskets. Seals out moisture. Displays product. Won't crack, split or shatter even if punctured.

Let a converter of VISQUEEN film help you package better. The coupon will bring names of those serving your area.

Important! VISQUEEN film is all polyethylene, but not all polyethylene is VISQUEEN. VISQUEEN film is produced by process of U.S. Patents No. 2461975 and 2632206. Only VISQUEEN has the benefit of research and technical experience of The VISKING Corporation, pioneers in the development of pure polyethylene film.

VisQueen® film . . . a product of

THE VISKING CORPORATION
World's largest producers of polyethylene sheeting and tubing
Plastics Division, Terre Haute, Indiana
In Canada: Visking Limited, Lindsay, Ontario

THE VISKING CORPORATION, BOX IE2-1410
Plastics Division, Terre Haute, Indiana

Send me names of converters of VISQUEEN film serving my area.

Name_____

Company_____

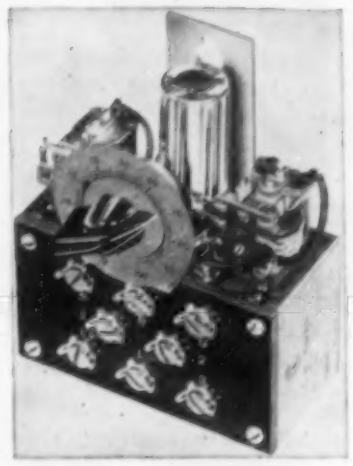
Address_____

City_____ Zone____ State____

If you write maker identify as IEN - 2170

TIMING . . Electronic interval unit employs cold cathode trigger tube

Source: FARMER ELECTRIC CO.
21 Mossfield Road, Dept. IEN, Waban 68, Mass.



Models CS4 and DS4

Non-repeat action has been added to the Type-CK electronic timer, previously described IEN-2824-51. The new design will operate without danger of repeating when started by a momentary contact or by one that exceeds the duration of the timed cycle. It is necessary to release the start switch and then press it again to obtain a second cycle.

Four ranges, maximum at 1.5, 3, 6 and 12 sec., are available. Setting can be made for any intermediate point in a given range by operating the dial at the front of the assembly. Recycling is instant. There is no wear on the tube during standby intervals. No warm-up interval is required. Operation is on 110-volt 60-cycle ac.

The load relay rates 8 amperes. Its contacts are single-pole double-throw without an intermediate "off." Overall dimensions are 3¾ by 3 by 4⅞ inches.

If you write maker identify as IEN - 2171

SIGNALING . . Capacitance unit actuates circuit on worker approach

Source: R. G. GENZLINGER INCORPORATED
Dept. I-7, Neshaminy, Pa.

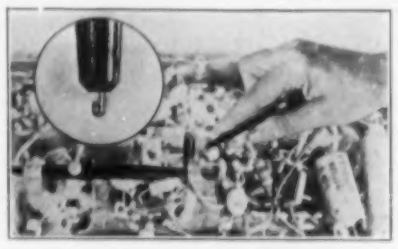
No need to touch

Silent Sentry is a new electronic capacitance unit in which circuit balance is upset and a control circuit relay is closed or opened on approach of an individual to the control housing. The unit can be employed to safe-guard workers at machines by shutting the machine down whenever any part of an operator's body enters a dangerous area. It applies as a property protection unit to sound an alarm. It will start and stop electrically driven devices, turn lights on and off, close and open circuits to signs and signaling equipment.

If you write maker identify as IEN - 2172

TESTING . . Circuit probe clips in place in difficult locations

Source: MIC-CON INCORPORATED
P. O. Box 265, Dept. IEN, Union, N. J.



Bulletin "Test Probe"

New test probe employs a spring backed push-operated mechanism in its insulated housing with which its central conductor finger can be clipped in place to hold securely until it is released. The unit enables an operator to make circuit connections for test purposes and still have his hands free to manipulate instruments and controls.

The probe alone lists at about $5. The probe, with a 48-in. test lead and straight tip jack, lists at $5.70. A similar unit, with an angle tip jack, is about $6.

If you write maker identify as IEN - 2173

Telescopic boom applies on a lift truck in place of the truck's forks to handle long loads, such as bar stock, between cars or trucks to storage and machining operations. The boom can be extended to a maximum reach of 10 ft., or retracted, by turning a crank in the base housing. It is raised and lowered by the regular controls on the truck itself, in this case an engine driven Utilitruc rating 5 ton. Storage racks are placed at a 45-deg. angle with the storage room aisle. The truck can reach in to pick up a 16-ft. bundle directly or can be secured to one end of the bundle and then employed to drag it out to a point where the center hitch can be completed. The attachment costs $1,000. Clark Equipment Co., Battle Creek 49, Mich., built the attachment.

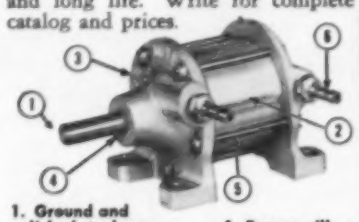
All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 2174

AIR-MITE AIR CYLINDERS

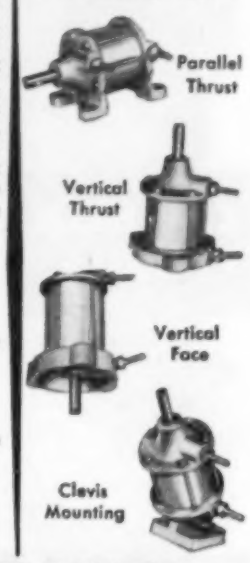
Low Cost . . Compact . . Powerful . . Rugged

AIR-MITE Cylinders—made in single or double acting series—in 4 mounting types, are high quality cylinders at a low price. Simple, rugged design and compact construction give them long life, permit easy mounting on jigs, fixtures, tools, or machines. Used wherever power holding, pushing, pulling or lifting is required, AIR-MITE cylinders will meet your most exacting standards of dependability and long life. Write for complete catalog and prices.



1. Ground and polished steel ram
2. Brass, true-bore cylinders
3. High strength aluminum alloy cylinder heads
4. Bronze oilless ram bushing
5. Five steel tie rods
6. Brass hose stems

4 Mounting Types



AIR-MITE

4419 W. CARROLL AVENUE • CHICAGO 24, ILLINOIS

If you write maker identify as IEN - 2175

on panels, doors or covers where frequent opening and closing are required . . . specify

CAMLOC FASTENERS

TIGHTER
QUICKER
ECONOMICAL

VIBRATION-PROOF
In years of constant use in aircraft—where vibration is always a bugaboo—CAMLOC Fasteners have proven themselves again and again.

POSITIVE LOCKING
Spring loading plus cam action, with a cross pin that can't come out, guarantee CAMLOC Fasteners against accidental opening.

OPEN & CLOSE QUICKLY
A quarter-turn with a screw driver—or of the wing head—opens or closes the CAMLOC Fastener . . . important where quick access is vital.

SAVE MONEY 3 WAYS
CAMLOC Fasteners cost less to install . . . eliminate costly replacement because they're made to take frequent use . . . fewer do the job.

Write for our illustrated brochure containing descriptive information on the basic Camloc fastener line. Address your request to 24 Spring Valley Road, Paramus, N. J.

CAMLOC FASTENER CORPORATION
MAIN OFFICE AND FACTORY PARAMUS, N. J.
WEST COAST OFFICE 5410 WILSHIRE BOULEVARD LOS ANGELES 36, CALIF.

If you write maker identify as IEN - 2176

If you pipe it...there's a Fairbanks® valve to control it

Fig. 0236
UNION BONNET
Gate Valve,
200 pound S.W.P.

Here is a typical example of the outstanding design, sound engineering and rugged construction that are built into every Fairbanks Valve. Years of experience in meeting all kinds of valve requirements for industry, have given Fairbanks Engineers a storehouse of knowledge in controlling the flow of water, steam, gas, oil, chemicals, etc. Consult them without obligation.

THE Fairbanks COMPANY
General Offices: 393 LAFAYETTE STREET, NEW YORK 3, N. Y.
Branch Offices: New York, N.Y. Boston, Mass. Pittsburgh, Pa. Rome, Ga.

VALVES • DART & PIC UNIONS • TRUCKS • CASTERS

If you write maker identify as **IEN - 2177**

THE **WIDE BAND POCKETSCOPE** BY WATERMAN

MODEL S-14-B

Another Waterman POCKETSCOPE confirming the obsolescence of conventional oscilloscopes. Characterized by wide band amplifier fidelity without peaking as well as amazing portability. S-14-B POCKETSCOPE is ideal for laboratory and field investigation of transient signals, aperiodic pulses, or recurrent electrical wave forms.

Wt. 14 lbs. 12" x 6" x 7"

Vertical channel: 50mv rms/inch, with response within —2DB from DC to 700KC, and pulse rise of 0.35 μs. Horizontal channel: 0.3v rms/inch with response within —2DB from DC to 200KC, and pulse rise of 1.8 μs. Non-frequency discriminating attenuators and gain controls, with internal calibration of trace amplitude. Repetitive or trigger time base, with linearization, from ½cps to 50KC, with ± sync. or trigger. Trace expansion. Filter graph screen. Mu metal shield. And a host of other features.

WATERMAN PRODUCTS CO., INC. PHILADELPHIA 25, PA.
CABLE ADDRESS: POKETSCOPE

WATERMAN PRODUCTS INCLUDE:

S-4-A	SAR	PULSESCOPE
S-5-A	LAB	PULSESCOPE
S-10-B	GENERAL	POCKETSCOPE
S-11-A	INDUSTRIAL	POCKETSCOPE
S-14-A	HIGH GAIN	POCKETSCOPE
S-15-A	TWIN TUBE	POCKETSCOPE

Also RAKSCOPES, LINEAR AMPLIFIERS, RAYONIC TUBES and other equipment

WATERMAN PRODUCTS

If you write maker identify as **IEN - 2178**

aluminum
brass
bronze
phosphor bronze
copper
monel
nichrome
gold
silver
nickel

NEWARK for ACCURACY

Wire Cloth in All Malleable Metals

Newark Wire Cloth is made of *all* malleable metals such as aluminum, brass, bronze, phosphor bronze, copper, monel, Nichrome, nickel and stainless steel; as well as the noble metals such as gold, silver, platinum, etc.

This wide range of metals enables you to select the one wire cloth to meet your conditions of corrosion and/or contamination.

In all metals, Newark Wire Cloth is accurately woven in a wide range of meshes, ranging from very coarse (4 inch space cloth), to extremely fine (up to 400 mesh). Our reputation for 'Accuracy' through more than 75 years is your guarantee of wire cloth quality.

We maintain a large stock of popular sizes in the more commonly used metals and can make prompt shipment. Let us quote on your requirements.

Send for our New Catalog E.

Newark Wire Cloth COMPANY

351 VERONA AVENUE • NEWARK 4, NEW JERSEY

If you write maker identify as **IEN - 2180**

DUST COLLECTING . . Cloth tube unit to remove nuisance and toxic dusts

Source: WALLACE & TIERNAN CO.
25 Main St., Dept. IEN, Belleville 9, N. J.

Bulletin TP-2-M

Series A-658 is a new dust collector available with ratings of 200 and 400 cfm. It is made in two designs, one as shown in the illustration to mount directly on a hopper. The other stands on the floor and connects to its intake through a 4-in. inlet in the side of the housing. A suction blower, driven by a totally enclosed dust tight motor, is mounted on top of the housing to draw air upward through a bank of cloth filter tubes.

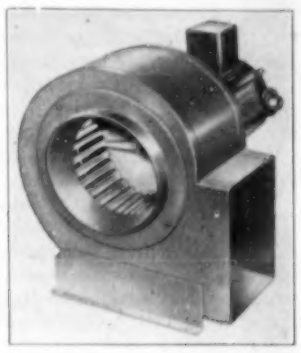
Incoming dust and air surround these tubes. The air passes through them to exhaust. The dust is collected on the tube surfaces to drop back to a screen in the base of the hopper mounted assembly, or to a collection bucket in the housing of the floor mounted design. The hopper assembly is fitted also with a side air inlet that can be connected as desired to exhaust dust from other locations than the hopper. On the hopper mounted unit is a 13 by 24-in. loaded hatch.

The collector is designed particularly to remove nuisance and toxic dusts that are raised during hopper loading or handling or feeding dry chemicals. Overall dimensions are about 2 ft. in diameter by 5 ft. in height.

If you write maker identify as **IEN - 2181**

VENTILATING . . Centrifugal blower with 6 in. impeller rating 600 cfm.

Source: STANDARD ELECTRIC MFG. CO.
Haddon Ave., Dept. IEN, West Berlin 12, N. J.



List is $25

Fumes, smoke, stale air are exhausted from a work area by this new motor driven blower. It is equipped with a 110-volt 60-cycle motor on which the impeller is mounted. Delivery is through a rectangular duct. Intake is at a circular collar. The motor is protected by a thermal cutout.

If you write maker identify as **IEN - 2182**

VIBRATING . . Pneumatic hammer to compact mastic refractories in place

Source: BURGESS-STERBENTZ CORP.
3790 W. 150th St., Dept. IEN, Cleveland 11, Ohio

Operates quietly

Vibron Bantam is a new air operated hammer to compact refractories, as in lining ladles or placing patches in furnace walls. The tool provides 1,800 strokes per min. at either of the two tool heads.

The small head is designed for initial ramming. The large head applies a final finish on the refractory surface. Operation is on 85 to 139-lb. air. Equipment includes a 10-ft. air hose and swivel coupling.

If you write maker identify as **IEN - 2183**

CLEANING . . Retractable hose for suction line on vacuum machine

Source: BREUER ELECTRIC MFG. CO.
5100 N. Ravenswood Ave., Dept. IEN, Chicago 40, Ill.

Will not tangle

Tornado Multi-Flex is a new light weight flexible hose made of a series of corrugations. The construction permits length retraction to 5 ft. or extension to 15 ft. for a standard hose unit. Flexibility is sufficient to permit moving the hose around obstructions on a floor without damage to the hose or the obstruction. Molded cuffs at the ends provide for quick attachment to tools and machines. The hose will fit any vacuum cleaner taking a 1½-in. commercial hose.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as **IEN - 2184**

PRATER ROTARY AIRLOCK FEEDER

FEEDS powdered and granular products into conveying line — quickly and accurately!
STOPS air leakage at the discharge of dust collectors or other pneumatic equipment!
PRE-DETERMINES rate of feeding material into mixers, blenders, hoppers, etc.
RECOMMENDED in the processing of: Ball Clay, China Clay, Diamaceous Earth, Kaolin, Grains and Feeds, Graphite, Limestone, Whey Powder, Calcium Carbonate, Sulphur, Fullers Earth, Ochre, Volcanic Ash, Bronze Powder, Bauxite, Carbon Black Salt, Barium Carbonate, Marl, Sugar, Cocoa, Gypsum, Silica, Manganese Sulphate, Phenolic Molding Compound.

Send for new illustrated bulletin

PRATER PRATER PULVERIZER COMPANY
1536 So. 55th Court • Chicago 50, Ill.

If you write maker identify as **IEN - 2185**

SHELDON

CHICAGO U. S. A.

OFTEN PAYS OUT ON THE FIRST JOB...

and gives additional years of "cost free" service.

In the past, lathes were generally bought as large and as heavy as possible to insure accuracy and sufficient power. Now, with accurate, low-cost Sheldon Precision lathes, it is more profitable to buy these faster, cost-cutting lathes for the specific job at hand just as you would buy jigs and fixtures.

In savings of tooling costs, operator cost, power cost, and plant loading, as well as extra profits from more pieces per hour. Sheldon lathes often pay back their cost on a single run.

Sheldon lathes will work to the closest tolerances—have "Zero Precision" Taper Roller Bearings. They can take a healthy cut when operating at high speed direct drive—have double V-belts to the spindle. They will swing 10", 11" or 13" and have a 1⅜" hole through the spindle—have sufficient capacity for the great bulk of lathe work. Sheldon lathes have created a new factor for figuring machinery costs. They are tools you should know about.

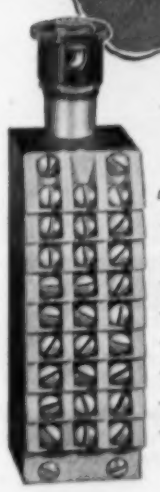
Write for Catalog

SHELDON MACHINE CO., INC.
4208 N. Knox Ave. Chicago 41, Illinois

If you write maker identify as **IEN - 2186**

LET SAFEGUARDS GO ON WITH THIS LONG LIFE

GUARDIAN 8 P. D. T. *Switch*



Hit the button or throw a lever on the Guardian 8 P. D. T. Switch and this overriding master unit instantly switches or disconnects 8 primary circuits. Constant contact pressure (4 ounces per point) is maintained throughout the stroke until positive *snap-action* occurs in either direction. No dead center. Contacts handle 5 amps, 28 V. D.C. inductive—10 Amps, 115V. A.C. non-inductive—60 to 400 cycles. Unit mounts on 1½" x 1½" panel area to conserve space and decrease overall costs. Sand and dust type enclosure easily removed for inspection. Built to exceed military specification ANS-63 applicable to this type switch to resist shock and vibration and to operate at −65° F. to +160° F. Easy to wire—easy to mount—compact—low cost. Available with auxiliary "push-to-test" S.P.D.T. circuit and dial light. Weighs approximately 8 oz.

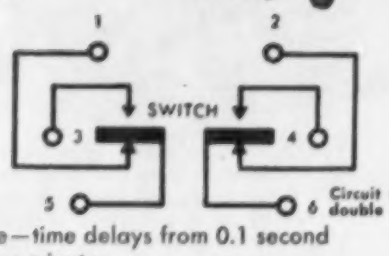
GUARDIAN ELECTRIC
W. WALNUT STREET CHICAGO 12, ILLINOIS
1620-B
A COMPLETE LINE OF RELAYS SERVING AMERICAN INDUSTRY

If you write maker identify as IEN - 2187

NEW! AGASWITCH

TRADEMARK

...to introduce time delays into electrical circuits



Circuit diagram, double pole unit

- Adjustable—time delays from 0.1 second to 5 or more minutes
- Manually operated, pneumatically timed
- Only 3½" x 2½" x 2½" overall
- Both single and double pole types
- Accurate, adaptable, compact and inexpensive

Write for details or application engineering assistance. Address Dept. A6-22.

A'G'A DIVISION ELASTIC STOP NUT CORPORATION OF AMERICA
1027 Newark Avenue, Elizabeth, New Jersey
Pioneers in pneumatic timing

If you write maker identify as IEN - 2188

Clipper® MASONRY SAW

SPECIAL SHAPES

Precision Cut on the Job From Standard Refractory Stocks

Every shape and size refractory **cut in seconds.** Perfect fitting reline jobs that last longer—cost less. And Clipper's Patented Features give you DUSTLESS cutting, instant Portability and complete Flexibility.

Nearly 20 Years Experience Behind GENUINE CLIPPER PRODUCTS

The unqualified Clipper guarantee of satisfaction is backed by world-wide experience, the ability to select the finest materials and the "know-how" to put them together.

DON'T GAMBLE!

You are GUARANTEED ECONOMY with CLIPPER SUPERIOR BLADES!

... all specifications of Abrasive, Diamond and "CBR" (Break-Resistant) Blades guaranteed to "Consistently Provide the fastest cut... at the lowest cost... with the greatest ease!"

FREE TRIAL!

Discover how Clipper will increase profits by increasing production at reduced costs. "ON THE JOB" FREE TRIAL guarantees satisfaction at NO OBLIGATION.

PATENTED CLIPPER FEATURES

PRESSURE EQUALIZER
Automatically Cushions Blade for Longer Life.

SELECT-A-NOTCH
Instant Adjustment for Any Size Material.

SAME DAY SERVICE FROM YOUR NEAREST FACTORY BRANCH —SEE BELOW

Clipper

SAVE BY SAWING REPAIR PATCHES and TRENCHES
IN FLOORS—RUNWAYS —STREETS with a CLIPPER "CONSAW"
5 MODELS—GAS OR ELECTRIC POWERED

MANUFACTURING CO.
- CINCINNATI
- BOSTON
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- DALLAS

IN CANADA - P.O. BOX 476, WINDSOR, ONTARIO

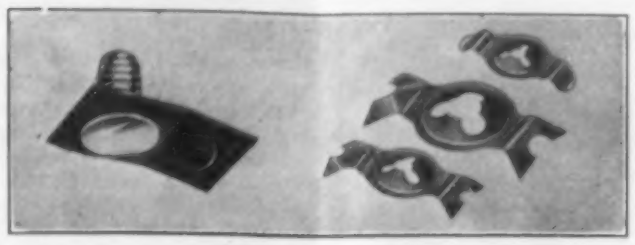
TEAR OUT AND MAIL!

CLIPPER MANUFACTURING CO.
11 E. 28TH ST., KANSAS CITY 8, MO.
Send FREE Literature and Prices on:
☐ CLIPPER MASONRY SAWS ☐ DUSTLESS MODELS ☐ DRY ONLY MODELS
☐ CLIPPER CONSAWS
☐ CLIPPER ABRASIVE BLADES ☐ WET ☐ DRY
☐ CLIPPER DIAMOND BLADES
98 IND.
COMPANY _____
ADDRESS _____
CITY _____ STATE _____

If you write maker identify as IEN - 2190

FASTENINGS . . Attachment stud and spring clamps for product assembly

Source: UNITED-CARR FASTENER CORP.
31 Ames St., Dept. IEN, Cambridge 42, Mass.



Designed for specific uses

Quickey trade names a new assembly of headed stud and spring plate in which the stud head is inserted into a keyhole opening and then is moved laterally to lock in place. The unit permits application of the studs after work has been done on an assembly in which a permanently positioned stud might be damaged.

Fishtail, to the right in the illustration, is a new spring clamp with sharp or blunt legs to press into place over the unthreaded shank of a stud. When assembly pressure is released the center jaws close in to bite into the stud and hold securely. Both new fastenings are available on quantity order in specified sizes.

If you write maker identify as IEN - 2191

COUNTING . . Electronic instrument counts pulses to 100,000 per second

Source: BERKELEY SCIENTIFIC DIVISION
2200 Wright Ave., Dept. IEN, Richmond, Calif.

Power reset

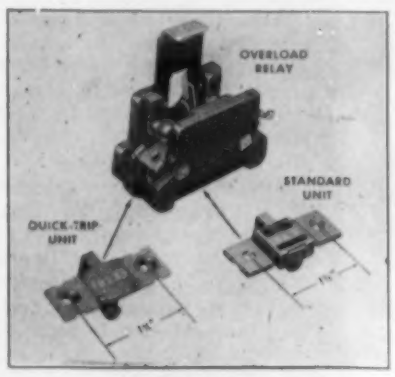
Electric pulses obtained from nuclear particle detection equipment are counted by this new Model-2200 electronic instrument. It forms the basic unit, in a range of particle counting applications, using linear amplifiers and other associated equipment. It consists of an input pulse height discriminator, an electronic scaling channel with 1 micro-second paired pulse resolution, 4-digit mechanical register, time clock and automatic control circuitry.

The scaling channel consists of four plug-in decimal counting units. The count indication is direct reading. Provision is made to drive an external relay in parallel with the register.

If you write maker identify as IEN - 2192

MOTOR CONTROL . . Thermal trip to protect hermetically sealed motor

Source: SQUARE D COMPANY
4041 N. Richards St., Dept. IEN, Milwaukee 12, Wis.



Interchangeable

Type FB designates a new quick trip overload thermal unit, for application in the company's overload relay, to protect hermetically sealed compressor motors. The new unit, shown to the left in the illustration, is interchangeable with the standard thermal element shown to the right. It trips in about one-third the time of the standard design.

Starters and unified control panels can be stocked without the thermal unit to minimize inventory. Then the correct unit can be matched to the compressor size at installation.

If you write maker identify as IEN - 2193

The problem of a roller conveyor blocking a traffic aisle in a plant is eliminated by a new "draw bridge" conveyor section now available from Alvey Conveyor Mfg. Co., 9301 Olive St. Road, Dept. IEN, St. Louis 24, Mo. The section is counter weighted to hold in "up" position as shown in the illustration. It can be swung down and locked when passage across the conveyor line is not required.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 2194

NEW BAKER "Yardloader"

4000 LB. GAS FORK TRUCK

COSTS ONLY $2985

Baker Yardloader now brings cost-saving fork truck operation within the reach of practically every company.

Travel speed approaching 14 miles per hour, large pneumatic tires, exceptionally high ground clearance and oscillating trail axle make it the ideal truck for outdoor service over large unimproved or semi-improved areas.

Heavy-duty industrial engine of proven make, 4-speed transmission and extra-heavy drive axle assure ample power.

Hydraulic lift to 122 inches, automotive-type steer and excellent driver visibility are a few of the features contributing to safety and ease of operation.

Get all the facts—and save up to $1,000.00 on your next gas fork truck.

Baker Industrial trucks

THE BAKER-RAULANG COMPANY
1226 WEST 80th STREET • CLEVELAND 2, OHIO

If you write maker identify as IEN - 2195

BURRELL *"For Scientists Everywhere"*

LABORATORY SHAKERS

Build-Up® Design — **Size BT** — **Wrist-Action™ Motion**

® *Trademark Registered U. S. Patent Office*
™ *Trademark*

You control procedures from gentle to violent shaking and repeat any operation, exactly, at another time. Side clamps take various shapes and sizes. Top clamps take bottles and erlenmeyer flasks. Loads need not be balanced.

CAT. NO.	ITEM	PRICE
75-765	Build-Up Wrist-Action Shaker, Size BT for 8 top and 8 side flasks	200.00
75-750	Burrell Heavy-Duty Shaker, Size 40 for 40 flasks—flat-top only	345.00
75-765	Build-Up Wrist Action Shaker, Size T for 8 top flasks	175.00
75-775	Build-Up Wrist-Action Shaker, Size BB for 8 side flasks	175.00

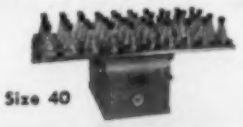
For 115 volts, 60 cycle, one phase. Other voltages to order.
For additional data, ask for Bulletin No. 307

Size T

Size BB

ONE BASIC UNIT SERVES MANY DIFFERENT REQUIREMENTS

You Build-Up with the new 8-place flat-top and with side arms for 4, 12 or 16 flasks. One basic unit adapts to any combination.



Size 40

HEAVY-DUTY MODELS

Extra powerful and rugged unit shakes up to forty erlenmeyer flasks or bottles.
Available in flat-top design only.

Prices listed are F.O.B. Pittsburgh, Pa.

BURRELL CORPORATION
Manufacturers and Distributors of
SCIENTIFIC APPARATUS and LABORATORY CHEMICALS
2223 Fifth Avenue, Pittsburgh 19, Pennsylvania

If you write maker identify as IEN-2197

If you write maker identify as IEN-2198

Why pay for unneeded "specs" in ball bearings?

This free catalog tells you how to cut bearing costs

Replace precision bearings with "commercials" and you save. You can do this under certain conditions, and this catalog tells you what they are. Write for it today.

The oldest, largest manufacturer of "Commercial" Ball Bearings

SCHATZ "Commercial" BALL BEARINGS

THE SCHATZ MANUFACTURING CO. • 6750 Fairview Ave., Poughkeepsie, N.Y.

If you write maker identify as IEN-2199

Works where others fail

Effectively removes oil, water, rust and dirt from air used for spray painting.

Spiral baffle whirls air. Centrifugal force flings particles of moisture, oil, rust, etc. out of the air stream.

Unique double-action filter screens out foreign matter and absorbs moisture and oil. It has proved effective on lines where the amount of oil and water has been too great for other extractors.

SEND TODAY for FREE copy of Bulletin AO-120

Binks

Write to:
BINKS MANUFACTURING CO. • 3120-34 W. Carroll Ave. • Chicago 12

If you write maker identify as IEN-2200

THREADING . . Pipe machine to drive hand tools, 1/8 to 2 inches

Source: OSTER MFG. CO.
2057 E. 61st Place, Dept. IEN, Cleveland 3, Ohio

Featherweight Champ

Universal motor, rated at ½ hp., operates the spindle of this new No. 142 machine at 22 to 36 rpm., variable with the load. It is fitted with reverse control. It can be replaced with a gasoline engine. The spindle is fitted with a pipe chuck. Rests project at the front and rear to support hand tools.

The machine weighs 75 lb., measures about 19 in. in height without the legs and 15 in. in width. Overall length, without the legs or pan, is 11½ inches.

If you write maker identify as IEN-2201

VALVE . . Pressure vacuum unit to protect volatile liquid tanks

Source: SELLERS INJECTOR CORP.
1600 Hamilton St., Dept. IEN, Philadelphia 30, Pa.

Bulletin 93-1 upon request

Vapor loss is minimized and storage tanks, handling volatile liquids, are protected against excess pressure or vacuum by this new Burp valve. The mechanism is assembled in a rectangular housing for installation on a cone-roof tank. Overall dimensions are 30 by 46 by 64 inches. Vacuum setting is normal at ½ in. of water and maximum at 1 inch. Pressure setting is normal at 1½ in. of water, maximum at 3½ inches.

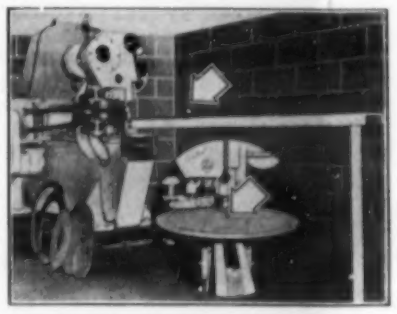
Characteristic of the valve is its complete opening action, a few seconds after tank pressure reaches the set value, and its ability to reduce the tank pressure by one-third in less than a minute. This action is followed immediately by closing. Venting is through a rotor that snaps shut, after each opening, so vapor must escape in puffs rather than in a stream.

Upper and lower rectangular sections contain the rotor and the vacuum and pressure mechanisms. Both are immersed in ethylene glycol/water to seal against leakage and to operate satisfactorily in temperatures down to minus 50 deg. F.

If you write maker identify as IEN-2202

SHEARING . . Center attachment for circle cutting on Pullmax machine

Source: AMERICAN PULLMAX CO.
2455 N. Sheffield Ave., Dept. IEN, Chicago 14, Ill.



Cuts circles and rings

New attachment mounts in slide on an inverted channel in front of the Pullmax reciprocating shearing machine, previously described IEN-3215-52. A center point can be set up on it to establish the center for circle cutting in diameters considerably larger than the throat capacity of the machine itself. The attachment is available to specification and can be supplied for hand or power feed. The machine will shear mild steel to 11/32 in. in thickness.

If you write maker identify as IEN-2203

HEATING . . Laboratory equipment also gently agitates the liquid

Source: BLUE M ELECTRIC CO.
306 W. 69th St., Dept. IEN, Chicago 21, Ill.

Noiseless

Liquid, held in a Pyrex jar, is heated and also is agitated by this new Magni-Whirl equipment. Two temperature ranges are ambient to 70 and to 100 deg. C. Three standard sizes are 8¼ by 8 in., 12 by 12 in., and 16 by 12 inches. A control permits automatic selection of any two most used temperatures within the range of the bath. Other temperatures can be selected without disturbing these preselected points. Controlled sensitivity is within 0.1 deg. C.

Agitation is by magnetic equipment in the base to a perforated plate in the jar. Operation is on 110-volt 60-cycle ac.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN-2204

ENGRAVE

NAME PLATES • PANELS • DIALS

in your own shop

10,000 IN USE Accepted by all leading manufacturers as the speediest, most versatile portable engraver. Only the NEW HERMES has these patented features:

- Adjustable for 15 ratios.
- Self-centering holding vise.
- Automatic depth regulator.
- Adjustable copy holders.

Send direct to us for booklet IM 23

NEW HERMES ENGRAVING MACHINE CORP.
13-19 University Place • New York 3, N. Y.

If you write maker identify as IEN-2205

You can make high quality welds every time with this lightweight, 300 amp. HELIARC HW-10 torch. Both the torch body and power cable have all-internal water-cooling for cooler operation even when welding continuously at full capacity. Yet cleaning is easy for all water passages are straight. Electrode adjustment is quick and simple, too. No wrenches needed. And electrode stub loss is minimized by an improved water-cooling system. Call your nearest LINDE representative today for more details on the HELIARC HW-10 torch.

LINDE AIR PRODUCTS COMPANY
A DIVISION OF UNION CARBIDE AND CARBON CORPORATION
30 East 42nd Street UCC New York 17, N. Y.
Offices in Other Principal Cities
In Canada: DOMINION OXYGEN COMPANY, LIMITED, Toronto

The terms "Heliarc" and "Linde" are registered trade-marks of Union Carbide and Carbon Corporation.

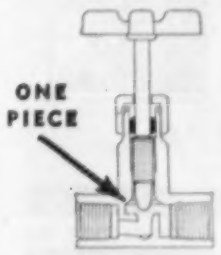
If you write maker identify as IEN-2206

New MARSH *Needle Valves*

MAXIMUM WORKING PRESSURE 10,000 PSI

. . . for finer regulation of water, oil or gas

First needle valve to combine all the characteristics called for in modern industry. Embodies sturdiest basic construction—machined from solid bar stock—suitable for pressures to 10,000 psi and equally efficient in lower range. Note stem guide fused to body by new "Conoweld" process, eliminating faults of conventional two-piece valves. Stem 416 stainless steel. Stem threads fine pitch for strength and micrometer regulation. Body electro-zinc plated. Sizes ⅛" to 1", globe and angle patterns.



Ask for new Needle Valve Catalog

MARSH INSTRUMENT CO. *Sales affiliate of Jas. P. Marsh Corporation*
Dept. A, Skokie, Ill.

If you write maker identify as IEN - 2207

A Better Strainer! —by DAVIS

—with BOLTED CAP

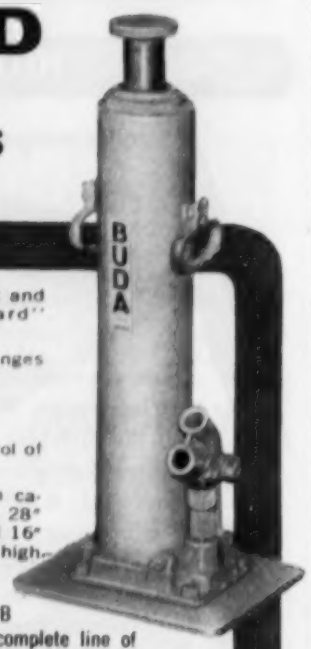
Bolted cap construction is used in sizes from 1½" to 12".

If you think all strainers are alike, ASK THE MAN WHO HAS TO GET INTO THEM! Davis builds Strainers with bolted caps, (instead of threaded caps) because numerous engineers have asked for them. It's easier to remove bolts than to try to unscrew a large thread cap after a strainer has been in use. Also makes possible locating blow-off at lowest point; no sediment pocket. Don't confuse Davis precision-made strainers with ordinary pipe fittings. Available in wide choice of types for steam, air, gas, or fluids. Semi-steel, bronze, or steel bodies; screw or flanged. Pressures to 1500 p.s.i. Brass, stainless or monel strainer screen. Ask for bulletin 100-A.

Davis
DAVIS REGULATOR COMPANY
2529 South Washtenaw • Chicago 8, Illinois

If you write maker identify as IEN - 2208

2-SPEED
HIGH-LIFT
HYDRAULIC JACKS



- Use "fast" speed for light and medium loads; "standard" speed for capacity loads
- One simple adjustment changes lifting speed
- One-man operated—easily portable
- Operator has positive control of lowering under load
- Available in 25 and 50-ton capacities. 25-ton models are 28" and 22" high with 22" and 16" lifts; 50-ton model is 26" high with 20" lift.

Write for new Bulletin 1515-B and full details on BUDA's complete line of mechanical and hydraulic jacks. "A jack for every job."

BUDA THE BUDA COMPANY Harvey, Illinois
Division of Allis-Chalmers Manufacturing Company

If you write maker identify as IEN - 2209

CLEMENTS IT BLOWS • SUCTION CLEANS • SPRAYS

Cadillac
PORTABLE ELECTRIC
COMBINATION BLOWER-SUCTION CLEANER

DO YOU WANT TO CLEAN FASTER, BETTER, EASIER AND AT LOW COST?

That's a big order, but the super-efficient CLEMENTS-CADILLAC cleaning tool can do it for you—has done it for industry, business and institutions everywhere . . . for more than 40 years.

Just ask your mill supply dealer, or write us for proof. No obligation on your part.

"Most Useful Tool in the Plant"

CLEMENTS-CADILLAC COMBINATION BLOWER SUCTION CLEANERS
CLEMENTS MFG. CO., 6620 S. HARRAGANSETT AVE., CHICAGO 38, ILL.
USED BY BUSINESS AND INDUSTRY FOR MORE THAN 44 YEARS

If you write maker identify as IEN - 2210

MOTOR . . Squirrel cage induction in new NEMA frame sizes 182 and 184

Source: RELIANCE ELECTRIC & ENGINEERING CO. 1088 Ivanhoe Road, Dept. IEN, Cleveland 10, Ohio

Chart B-1284

Series D designates new line of squirrel cage induction motors on which the company has started production in the new NEMA frame sizes 182 and 184. The line includes open protected and totally enclosed fan cooled designs in 1, 1½ and 2-hp. ratings at present. Additional ratings, to 30 hp., will be introduced in 1954 and 1955.

The present line, based on the old NEMA frame sizes, starting with 203 and 204, will be continued during the change-over period. Dimensions of the new line are generally, smaller than those of the previous NEMA sizes without loss of power rating. The company has prepared a chart showing the dimension comparisons and known as the Compar-A-Frame. It is available on request.

If you write maker identify as IEN - 2211

CONVEYING . . Pneumatic equipment for granules, powders in "dense phase"

Source: SAWYER BAILEY CORP. 1559 Niagara St., Dept. IEN, Buffalo 13, N. Y.

Technical data upon request

Fluidized Feeding designates the action of new equipment the company has developed to employ a centrifugal compressor in connection with a carrier gas and pipe lines to fluidize a bed of powdered or granular materials. The materials then flow readily in bulk for processing, mixing, storing. Finished products can be metered, bagged, packaged. Various solids can be fed from separate fluidized beds into a common container in measured amounts.

The fluidized material is in "dense phase" in a solids to gas ratio as high as 400 to 1. As a result there is little air or gas to bleed off and atmosphere dust contamination is minimized. Equipment with capacity to handle 6 ton per hour through a 2-in. 1,000-ft. pipe, at 10 fps., with solid to gas weight ratio of 267 to 1, requires 100 hp. The company is prepared to consult with prospective users to show how the equipment can be applied for dry materials handling.

If you write maker identify as IEN - 2212

TESTING . . Flexing machine determines stiffness of sheet and wire

Source: TABER INSTRUMENT CORP. 111 Goundry St., Dept. IEN, North Tonawanda, N. Y.

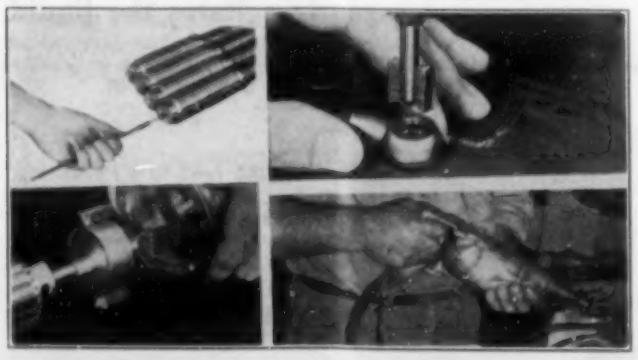
110 volt ac. drive

Flexural rigidity of very thin material, such as cellophane, metal foil, synthetic fiber, watch springs, brush bristles, can be determined on the company's Model 150-1954 stiffness tester in connection with a new SR150-14 attachment. It magnifies the dial readings 100 times. Test length, angle of deflection, rate of loading are standardized.

Readings are taken direct from the dial. The mechanism is sealed against entrance of foreign matter. Exposed parts are made of aluminum and stainless steel. The machine provides 8 test ranges. A triple cut shear is supplied to blank precision specimens to 20-pt. thickness.

If you write maker identify as IEN - 2213

Illustrated are four examples of application for the little rotary wire brushes that form a small but important part of



the brush line made by Osborn Mfg. Co., 5401 Hamilton Ave., Dept. IEN, Cleveland 14, Ohio. The brushes apply alone or in holders, either singly or in multiple, to clean out cavities, to remove burrs from threaded work, to clean carbon from engine valve seats, to remove heat scale and white lead, to clear obstructions from oil holes. The company has prepared a chart covering examples employing brushes from ¼ to ⅞ in. in diameter. It will send you this chart on request.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 2214

GRIES DIE CAST GEARS & PINIONS ARE BIG NEWS!

DIE CAST IN ONE PIECE!

Gries eliminates costly manufacturing and assembly of 2 to 4 separate parts . . . and the savings are all yours! Independent tests prove zinc alloy gears wear well, as they are to some degree self-lubricating. Integral one-piece assemblies can be made with shafts as wll as center holes; ALL parts are produced to individual specifications. Gears available up to 1-5/16" outside diameter by 1/16" face width; wider faces as diameter decreases. Many gears, pinions, and combinations can be furnished without tooling charges from stock dies; there is a nominal charge for extra close precision requirements, and special designs.

Write TODAY for information about Gries standard components. Send specifications for prompt estimates

World's Foremost Producer of Small Die Castings
GRIES REPRODUCER CORP.
139 BEECHWOOD AVENUE • NEW ROCHELLE, N. Y.
Phone: NEw Rochelle 3-8600

If you write maker identify as IEN - 2215

BEVERLY THROATLESS SHEARS

MAKE CUTS LIKE THESE

QUICKLY... EASILY... ACCURATELY

18 ga. metal cut with Model B-1 Shear

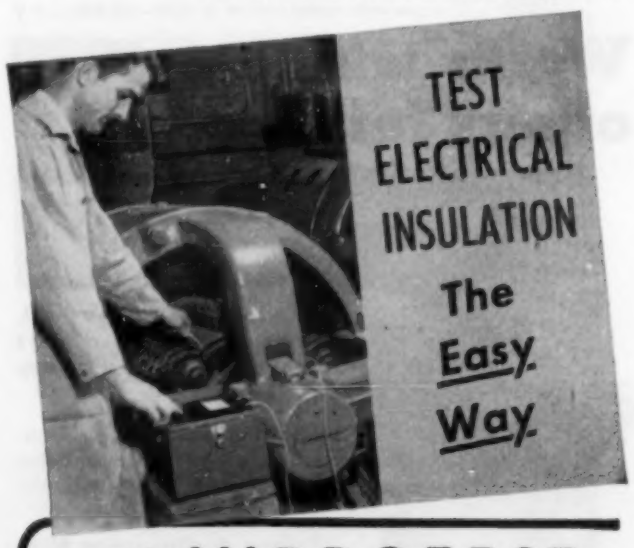
Save time, labor and material—use a Beverly to make any cut . . . straight, curved or irregular in any metal. Exclusive design allows work to be turned at any angle while cutting. Standard in the industry for years. 4 models—capacities to ⅝" mild.

See your Beverly Distributor for a demonstration. Write for FREE illustrated circular on Beverly metal cutting Shears.

MODEL B-3 with ball bearing hold down. Cap. ⅜" mild; 10 gauge stainless.

Beverly SHEAR MFG. CO.
3012 W. 111th STREET • CHICAGO 43, ILLINOIS

If you write maker identify as IEN - 2216



with VIBROTEST

TESTING your motors and other electrical equipment with Vibrotest not only saves hard manual labor; but also assures you of accurate readings at the touch of a button. Vibrotests are fully portable, rugged, and thoroughly dependable. Numerous Vibrotest Models to choose from—many with volts and ohms ranges in addition to megohm ranges. Act now to get easier, better, faster insulation resistance testing.

- Push-button operation
- No Cranking
- No Leveling
- Instant Action

Write for Bulletin 2A

ASSOCIATED RESEARCH, Incorporated
Precision Instruments • Since 1935
3762 West Belmont Avenue, Chicago 18, Illinois

If you write maker identify as IEN - 2217

the head with
the extra sales appeal
and
extra production
efficiency

Lamson & Sessions

PHILLIPS HEAD

MACHINE AND TAPPING SCREWS

Lamson Phillips Head Screws win hands down when it comes to good looks *plus* production efficiency.

If you are still using common slotted head screws for external assemblies better take a good look at the possibility of switching to Phillips Head. The savings, in terms of faster, more efficient assembly and better looks, can more than compensate for their slightly higher price.

Right now Lamson & Sessions can offer you quick delivery on Phillips Head Machine and Tapping screws in most popular sizes. May we quote on your requirements?

Lamson & Sessions

The LAMSON & SESSIONS Co.
1971 WEST 85th STREET
CLEVELAND 2, OHIO

Plants at Cleveland and Kent, Ohio • Birmingham • Chicago

If you write maker identify as IEN - 2218

Your BEST Buy ...regardless of price!

WITT CANS and PAILS

WITT CANS and PAILS are designed and constructed to give you more service for your dollar. They withstand years of hard usage and abuse which wreck the ordinary container. Many WITT CANS and PAILS are still in excellent condition after 10, 15, yes even 20 years or more service. They're guaranteed to outlast 3 to 5 of the ordinary kind. Regardless of price, you get more for your dollar. Buy a WITT!

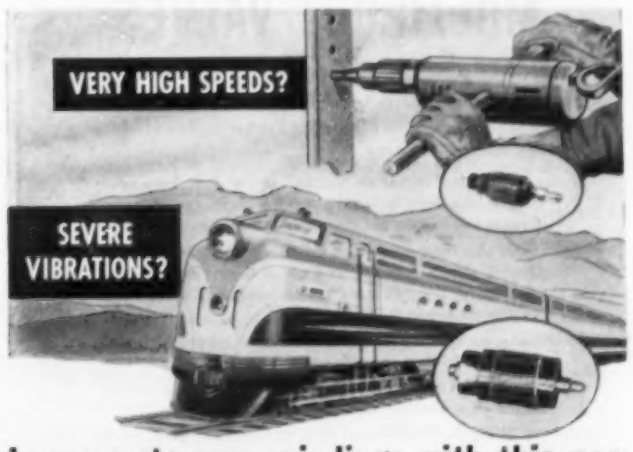
Compare WITT CAN and PAIL features with others on these points . . .

- STRAIGHT SIDES
- HEAVY GAUGE STEEL
- STRUCTURAL STEEL BANDS
- HOT DIP GALVANIZING
- PINCH-PROOF HANDLES
- STURDY LID
- DEEP ROLLING CORRUGATIONS

Witt Cans WITT CANS HAVE THE "RIGHT" ANGLE
"Originators of the Corrugated Can"

THE WITT CORNICE COMPANY, 2133 WINCHELL AVE., CINCINNATI 14, OHIO

If you write maker identify as IEN - 2219



Impregnate your windings with this new high-strength varnish — IRVINGTON No. 140

Lab tests prove it—field studies confirm it! The exceptional bonding strength of Irvington No. 140 prevents coil movement at high speeds or under severe vibration.

In addition, it offers high resistance to heat, oil and chemicals; excellent electrical properties; unusual stability.

Get the facts on this new Irvington insulating varnish—write for technical data bulletin.

LOOK TO IRVINGTON FOR INSULATION LEADERSHIP

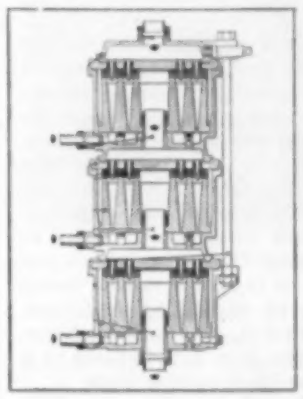
IRVINGTON VARNISH & INSULATOR
DIV. OF MINNESOTA MINING & MFG. CO.
31 ARGYLE TERRACE, IRVINGTON 11, N. J.

Plants: Irvington, N. J.; Monrovia, Calif.; Hamilton, Ontario, Canada

If you write maker identify as IEN - 2220

SEPARATING . . Multiple cyclone for filtrate clarification, fine sizing

Source: **DORR COMPANY**
Barry Place, Dept. IEN, Stamford, Conn.



Bulletin 2502

DorrClone Type TM is a new multiple-unit assembly of small cyclone components made of rubber or Bakelite installed in a common housing. The equipment can be arranged in 1, 2 or 3-stage assemblies. Twenty-four cyclones are cast in a single block when rubber is employed. The inside diameter of each is 0.59 inch. Thirty-two Bakelite cyclones are employed in a standard stage, the assembly being arranged in this case in a bronze or stainless steel holder.

A multiple-stage combination can be made with rubber in the first stage and Bakelite in the second and third when there is a small amount of grit in the feed. This will be removed in the abrasion resistant rubber stage and maximum separation will be obtained in the Bakelite fitted second and third stages.

Feed is introduced tangentially into the upper section of each stage under pressure. Relatively coarse material is thrown outward to the walls of the cones where it collects and passes downward and out of the unit through the underflow opening. Fine particles move inward and, with most of the water, pass out through the overflow openings.

All cyclones in each stage operate in parallel. The stages are connected in series. Overflow from the first stage is the feed to the second stage and overflow from the second is the feed to the third. Overflow from the third stage is the final effluent.

Underflow from the first stage is the only one that is removed as the underflow from succeeding stages is recycled to the feed. Control is by regulating the back pressure on the underflow manifold of each stage.

If you write maker identify as IEN - 2221

GRINDING . . Portable electric tool drives mounted points, to 22,000 rpm.

Source: **DUMORE COMPANY**
1300 17th St., Dept. IEN, Racine, Wis.

Wheels to 1 inch

Super-10 is new design, for continuous duty, of the company's Series-10 hand grinder. Its 1/10-hp. motor is universal design for operation on 110-volt input. The tool weighs about 3 pounds. It measures 10¼ in. in length, 2½ in. in body diameter and about 1¼ in. at the grip shank. It is recommended for tool and die work and for continuous-duty operation on a production bench.

If you write maker identify as IEN - 2222

RECORD KEEPING . . Time printer is actuated by 30 remote contacts

Source: **CINCINNATI TIME RECORDER CO.**
1733 Central Ave., Dept. IEN, Cincinnati 14, Ohio

Good for security

Whenever a pair of contacts is closed, at any one of 30 remote stations, this new Model-CSR Master Time Printer registers a symbol for its station and prints the time and date on a 2¼-in. paper tape. The printer will accept, monitor and record information from all of the stations regardless of simultaneous operation or sequence in which received.

The equipment consists of the recorder and a relay assembly. The recorder, shown in the illustration, measures 12½ by 8½ by 12½ in. and weighs 30 pounds. The relay assembly is enclosed in a wall mounted steel cabinet measuring 15 by 6 by 15 in. and weighing 35 pounds. Operation is on 110-volt 60-cycle ac.

Typical applications are as a central recorder for outlying watchmen stations, as a recorder in fire alarm equipment or as a locator producing a printed record. Installation can be made in connection with security operations where doors, files, locks must be monitored, and as time study control equipment in connection with machine tools to give a printed record of production time.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 2223

FOR
"SURE FIRE" WATER SERVICE

A Horton® elevated tank is your best protection against interrupted water service. When connected to an automatic sprinkler system, it provides dependable fire protection on the job 24 hours a day. Such a combination often reduces fire insurance premiums.

For "sure fire", efficient, uninterrupted water service in your plant, write our nearest office for estimates or quotations.

CHICAGO BRIDGE & IRON COMPANY
2123 McCormick Building • Chicago 4, Illinois

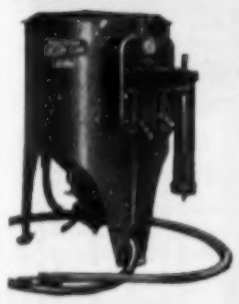
Atlanta • Birmingham • Boston • Cleveland • Detroit
Houston • Los Angeles • New York • Philadelphia • Pittsburgh
Salt Lake City • San Francisco • Seattle • Tulsa

Plants in BIRMINGHAM, CHICAGO, SALT LAKE CITY and GREENVILLE, PA

If you write maker identify as IEN - 2224

Here's how Pangborn *Solves these Problems* with this modern equipment

BLAST CLEANING!



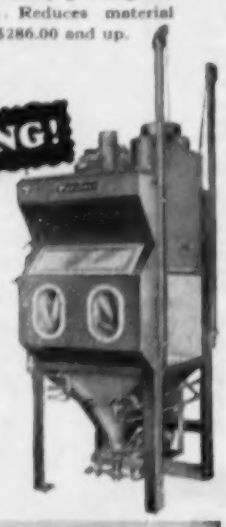
Blast Cleaning Cabinet quickly and easily cleans metal parts of rust, grime, dirt, paint, etc. Produces a clean, smooth surface on pieces up to 60" x 36". Models available from **$319.00 and up.**

Blast Cleaning Machines not only removes rust, dirt, scale, etc., but is ideal for maintenance and many other uses. Cleans large objects such as bridges, structural work, tanks before painting. Six sizes, portable or stationary, **from $188.00 and up.**

DUST COLLECTING!

Unit Dust Collector stops dust at its source, minimizes machine wear and tear, reduces housekeeping and general maintenance costs. Solves many grinding and polishing nuisances. Reduces material losses. Models from $286.00 and up.

PRECISION FINISHING!



Hydro-Finish Cabinet uses liquid blast, eliminating dust, and reduces costly hand polishing, cleaning and finishing of molds, dies, tools, etc. Removes scale, discoloration and directional grinding lines, prepares surfaces for plating and coating. Holds tolerances to .0001". Models **from $1,410.00 and up.**

LOOK TO PANGBORN FOR THE LATEST DEVELOPMENTS IN BLAST-CLEANING AND DUST CONTROL EQUIPMENT

Pangborn

MAIL COUPON for full details

(Check for more information)
- ☐ Blast Cleaning Cabinets
- ☐ Blast Cleaning Machines
- ☐ Unit Dust Collectors
- ☐ Hydro-Finish Cabinets

PANGBORN CORP., 2300 Pangborn Blvd., Hagerstown, Md.

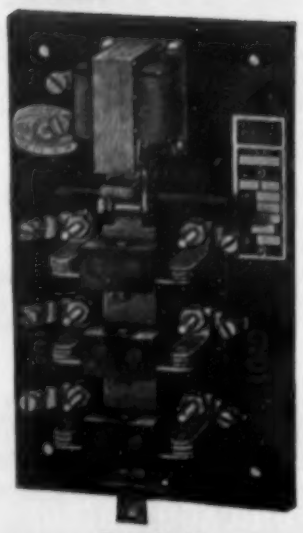
Gentlemen: Please send me more information on the equipment I've checked at the left.

Name .....
Company .....
Address .....
City ..... Zone .... State .....

If you write maker identify as IEN - 2226

NEW ZENITH MAGNETIC SOLENOID CONTACTORS

★ SOLENOID OPERATED
★ FINE SILVER CONTACTS
★ SIMPLIFIED WIRING



TYPE SC 33

This ZENITH contactor is built to withstand the severe service demanded by loads based on Type-C lamps.

It is designed on the straight-line principle, with the solenoid being connected directly to the contact bar.

The advantage of this method of construction is its easy access to any part for quick inspection or service, without disturbing other parts.

Models: Size 1 — 25 amps. Size 2 — 50 amps.

Either size can be supplied in any number of poles.

SEND FOR FREE CATALOG

This big, illustrated catalog contains all the newest items in automatic control equipment made by Zenith! Write now for your Copy!

ZENITH ELECTRIC CO.
146 W. WALTON ST., CHICAGO 10, ILLINOIS

If you write maker identify as IEN - 2227

PENETROL saves PITTSBURGH STEEL CO. 1¼ mile steel trestle from destruction under excessive corrosive conditions!

AIR-DRYING OIL

1¼ miles of steel trestle . . . carrying endless strings of cars loaded with freshly-quenched granulated slag, that drip chemical and acid contaminated water on the structure continually . . . yet it is safe and strong, in every joint and surface, because it's PENETROL protected!

Here's what Jack Moreland, Supervisor of Painting, Pittsburgh Steel Co., Monessen, Pa., says: "This was a tough condition in 1941. We were becoming aware of the fact that thousands of joints and the large areas of flat surfaces in this trestle, were being subjected to rust and corrosion from many different sources. PENETROL was slushed into all structures. Here's the method:

(1) Brush, scrape and apply clear PENETROL to all joints and other rusted spots. It is more important to PENETROL the joints than it is to paint any other part of the structure.

(2) Apply prime and finish coats, fortified with PENETROL.

Use this time-proved, money-saving, structure-preserving PENETROL method to assure protection against rust to all inside, hidden, and exterior surfaces. Order PENETROL now!

joints and also applied to other pitted and rusted areas, during the time the surfaces were being cleaned for painting. The whole structure was given two coats of paint, each fortified with PENETROL. In 1947, the joints were okay . . . did not need special treatment . . . and we repainted the entire structure with paint to which we had added the protective qualities of PENETROL. In 1954, the joints and general structure still are in good condition, thanks to PENETROL!"

Ever since this outstanding performance, the Pittsburgh Steel Company Monessen Mill has used the PENETROL system of protection on all its steel

PENETROL PRICES:
5 Gal. $15.75; 30 Gal. $88.50; 55 Gal. $159.50, F. O. B. Hudson, Ohio. Free Literature!

PENETROL® is manufactured by THE FLOOD COMPANY HUDSON, OHIO

If you write maker identify as IEN - 2229

MOTOR CONTROL . . Sealed switch to start and stop textile loom motor

Source: GENERAL ELECTRIC CO.
Dept. 6X-201, Schenectady 5, N. Y.

Bulletin GEA-6001

Steel enclosure for this new loom switch is fitted with a gasketed cover door in which a die cast aluminum slide engages the switch mechanism. The slide is held in place by a spring against a cotton felt gasket that is not subject to attack by moisture, fungus or insects. The cork neoprene gasket in the cover is also resistant to attack by moisture, abrasion, corrosive atmospheres. It is held in place by a Bakelite mounting plate.

Overall dimensions are 5 by 4 by 9¾ inches. Installation can be made on a wall, on a loom or by means of the pedestal shown in the illustration. This pedestal measures 6 by 5⅝ by 4 inches. The switch has motor rating to 2 hp.

If you write maker identify as IEN - 2230

STEEL . . High speed tool steel with free machining characteristics

Source: VANADIUM ALLOYS STEEL CO.
Dept. IEN, Latrobe, Pa.

Technical data upon request

The company announces production in its lines of high speed steels, with additives to provide free machining characteristics, the same as in its previously developed low alloy tool steels when Speed Cut tool steel was announced in 1946. The new free machining series is suggested for use in making tools on which a smooth finish from machining is required, particularly on tools such as form cutters and hobs that cannot be ground.

The same hardening and tempering instructions apply on the new free machining steels as are employed on the comparable steels that do not contain the free machining additives. List prices carry an additional 5 cents per lb. on the list of the comparable steel.

Forms available include bars, discs, rings, forgings, sheet, plate. Bar stock is maximum at 9¾ in. in diameter in rounds, 3 by 7 in. rectangular. Other sizes and shapes are subject to specification. The company has prepared a series of booklets, covering its original steels, to assist in selection, to provide working and heat treating suggestions for each of the high and low carbon lines.

If you write maker identify as IEN - 2231

SEPARATING . . Pipe line unit takes entrainment from air, gas, steam

Source: WRIGHT AUSTIN COMPANY
3245 Wight St., Dept. IEN, Detroit 7, Mich.

Catalog 500

Type 31N is a new horizontal unit in the company's 30N series of pipe line separators to remove water, oil, solids from a flow of air, gas or steam. Eleven sizes apply in 2½ to 18-in. pipe lines. Diameter ranges from 6⅝ to 30 inches. Face to face length is 20 to 82 inches. Capacities range from 150 lb. and 650-deg. F. steam to 600 lb. and 750-deg. F. steam. Flanges are standard ASA design.

Entrainment materials are thrown out by centrifugal force as the flow is directed by vanes in the entering section. Clean dry flow issues from the opposite end. The separated materials flow beneath a baffle plate through an outlet leading to a suitable trap. Outlet sizes range from 1 to 2½ inches. The company can supply the trap to specification.

If you write maker identify as IEN - 2232

Support bracket for a standard carbon dioxide fire extinguisher mounts on the wall and includes a weighing mechanism. A full extinguisher will read "full" in a window on the side of the bracket if it is fully charged and so weighs enough to operate the mechanism. An empty container will read "empty." The bracket is finished in red for quick identification. It is sealed against tampering. Manufacturer is Mel-Rod Mfg. Co., 11616 Hart St., Dept. IEN, North Hollywood, Calif.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 2233

FOR ECONOMICAL HEAVY INDUSTRY VENTILATION • CHOOSE VERSATILE BURT MONOVENT

While the Burt Monovent Continuous Ridge Ventilator is used throughout industry, it is particularly efficient in steel mills, foundries, forge shops, etc. The Monovent may be installed on any type roof. It converts the roof line to a gigantic exhaust valve that removes heat, smoke and fumes the entire length of the building, quickly and economically. And the Monovent's simple, sturdy, construction provides long, trouble-free life with practically no maintenance. See Sweet's or write for Bulletin SPV-6 for complete Burt Monovent data.

FAN & GRAVITY VENTILATORS • LOUVERS • SHEET METAL SPECIALTIES

The Burt Manufacturing Company
909 So. High St., Akron 11, Ohio
MEMBER POWER FAN MANUFACTURERS ASSOCIATION

If you write maker identify as IEN - 2234

NO STICKING
NO JAMMING
NO FREEZING

cochrane
MULTIPORT VALVES

In vapor systems where pressure relief to atmosphere is a must for safety—maximum savings important, Cochrane Multiport Pressure Relief Valves are the answer.

Safer—multiple "vapor cushioned" valve discs instead of one ordinary valve disc insure discharge upon overpressure without freezing, sticking or jamming.

Economical—they discharge only unusable steam. Usable steam is conserved at all times, even during discharge. They require a minimum of maintenance—no maintenance in most cases.

Efficient—no stuffing boxes are used on operating parts hence no friction retards responsiveness.

Free from hammer—they close without "blowdown"—never slam shut to cause hammering or vibration in the line.

Easily adjusted to desired pressure—simply turning the valve handwheel or chainwheel obtains any desired pressure setting in the range zero to maximum. You are able to change quickly to any new back pressure you desire to carry.

Simple, positive operation—when pressure rises above set pressure the vapor cushioned valve discs e-a-s-e open metering off only unusable vapor, then close gently. Abrupt changes are eliminated, equipment always protected.

Write for more facts on how Cochrane Multiport Valves save steam, cut maintenance, provide complete protection in your plant.

cochrane corporation
3152 N. 17th Street, Philadelphia 32, Pa.

If you write maker identify as IEN - 2236

DO YOU KNOW THESE FACTS ABOUT PRE-FINISHING?

Know how to keep your finishing process from becoming outdated? Switch to prefinished ENAMELSTRIP. A few facts about this pioneer process will show you it pays to finish the modern, ENAMELSTRIP way:

- Coats and colors metal before fabricating.
- Eliminates costly operations.
- Comes precision-slit to your specifications in a choice of metals.
- Non-anodized organic finish, withstands all Fabricating stresses.
- Finished in one, or two colors (one on each side).

GET ALL THE FACTS ON ENAMELSTRIP
in our new full-color bulletin. Send for yours today.

THE COATED COIL CORPORATION
511 West 30th Street, New York 1 • LOngacre 5-3161

If you write maker identify as IEN - 2237

"Our Entire Production Staff Endorses The HOBBS Tri-Power Die Press"

High output, safety features cited by Royal Lace Paper Works, Inc.

"Our new Roylprint Paper Place Mats have enjoyed very remarkable consumer acceptance . . . and certainly one main reason we have been able to maintain high quality has been use of the Hobbs Tri-Power Die Cutting Press.

"The versatile electric clutch, the safety features and the very satisfactory output are all reasons why our entire production staff endorse this equipment."

So says William T. Kelly, production manager, Royal Lace Paper Works, Inc., Brooklyn, N. Y. He is shown above at right checking die cut quality with Jud J. Mealy, production engineer at Royal Lace.

You, too, can benefit from new quality, new speed, new safety with the Hobbs Tri-Power. It has an easy hand-operated table motion, cuts cleanly at 16 strokes per minute through as much as a ream of many papers using conventional high die. Ideal for continuous run, single strokes and jogging operations.

Write for free illustrated folder today. No obligation. For complete technical details describing what the Hobbs Tri-Power can do for *you*, just mention your type of production.

HOBBS MANUFACTURING CO.
40 SALISBURY STREET
EST. 1905
WORCESTER 5, MASS.

Manufacturers of Modern Converting Machinery

If you write maker identify as IEN - 2239

GRINDING . . Portable pneumatic tool drives mounted points, to 85,000 rpm.

Source: NEWAGE INTERNATIONAL INC.
235 E. 42nd St., Dept. IEN, New York 17, N. Y.

Variable speed control

Mounted points and wheels, high speed steel and tungsten carbide burrs can be employed in this new Lorantco turbine driven tool. It is designed for grinding, polishing, finishing operations as well as for sharpening tools in place in a machine. Spindle speed can be varied to the three maximums in which the tool is available at 55,000, 70,000 and 85,000 rpm. Two designs, for light and heavy duty, employ lightweight alloy and steel bodies.

The spindle is mounted in precision ball bearings in both cases and is fitted with a collet chuck. Air from the turbine cools the bearings and is discharged through holes in the spindle to be directed at the cutting tool to also assist in cooling it and blowing cuttings clear of the working area. Required air pressure ranges from 60 to 100 pounds.

If you write maker identify as IEN - 2240

FASTENINGS . . New point design for company's cap and set screws

Source: ALLEN MFG. CO.
113 Sheldon St., Dept. IEN, Hartford 2, Conn.

Please note our error

In describing the new unthreaded leader point for the company's line of cap screws, in IEN-745-54, we identified it with the new set screw design in error. We should have referred to the cap screw.

If you write maker identify as IEN - 2241

PACKAGING . . Hand dispenser to take self-adhesive filament tape

Source: MINNESOTA MINING & MFG. CO.
900 Fauquier St., Dept. IEN, St. Paul 6, Minn.

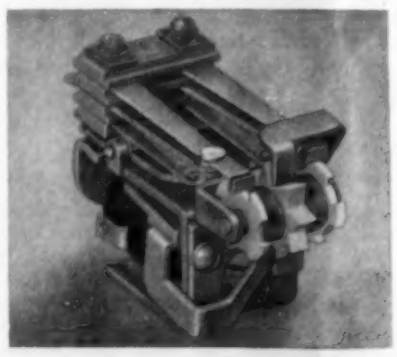
List is $5

Model H-120 is a new tape dispenser that is featured by its fixed saw toothed cutting edge. This edge will sever the tough filament tapes when the operator twists the disepnser. It will outlast several trigger operated razors employed in the previous design. The unit takes 60-yd. rolls of tape in ½ to 1-in. widths. It mounts the tape on a ratchet mechanism that permits moving the roll forward as the tape is used up.

If you write maker identify as IEN - 2242

RELAY . . For sequence duty is opened and closed by cam action

Source: STRUTHERS-DUNN INCORPORATED
150 N. 13th St., Dept. IEN, Philadelphia 7, Pa.



Bulletin 5211

Frame 211 designates a new sequence relay that can be equipped with double-pole single-throw or double-throw contacts that can be set to open, close or transfer in any desired sequence that is divisible by 6 or 8. These two numbers represent the number of teeth on available ratchets that form the operating part of the assembly. The cam rotates one-half step when the coil is energized. It completes the step when the coil is de-energized.

Contacts are made of silver and are mounted on bronze flexing arms locked between molded insulating spacers. Contact rating is 5 amp. on 110-volt ac. The coil is continuous duty and is available for operation on 110-volt dc. or 220-volt ac. in standard construction. Other coils can be specified. The relay measures about 2⅝ in. in line with the contact arms, 2⅛ in. at right angles to the arms. It is about 1¼ in. in width.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 2243

WHERE SPEED COUNTS

YOU CAN DEPEND UPON ELECTRO-MECHANO ELECTRIC PORTABLE TACHOMETERS TO READ WITH SUSTAINED ACCURACY ANY SHAFT R.P.M. OF LOW OR HIGH SPEED

You get on the spot fast results at all speeds with the triple range expanded scale indicator. Instant precise speed response; no timing or chance for error. Electro-Mechano tachometers are used in production, power plants, laboratory and field work. Check speed of electric and air motors, diesel and gas engines, turbines, machine tools, or in speed setting, etc.

Extreme low torque driven hand-piece with the shaft mounted on lubricated and sealed precision selected ball bearings. Sturdy shockproof construction and careful calibration to exacting requirements, assure lasting accuracy. No wearing parts, batteries or external power needed, eliminating downtime and inaccuracies due to wear and continuous use. Sudden overspeed or change will not affect the accuracy of readings.

Accuracy of readings are within 2% of scale, standard. Calibration to ½ of 1%, and 1% is available.

4 Standard Models listed below. $71.00 complete.

1. 0 - 5000, 5000 - 10,000 & 10,000 - 20,000 R.P.M.
2. 0 - 2500, 2500 - 5000 & 5000 - 10,000 R.P.M.
3. 0 - 1000, 1000 - 2500 & 2500 - 5000 R.P.M.
4. 0 - 600, 600 - 1200 & 1200 - 2500 R.P.M.

Special scales or markings to your exact specifications $81.00 complete.

Electro-Mechano manufactures a complete line of portable and stationary mounted electrical tachometers.

Write for more information today; consult us with your speed checking problems.

THE ELECTRO-MECHANO CO.
269 EAST ERIE STREET • MILWAUKEE 2, WIS.

If you write maker identify as IEN - 2244

SEND FOR THIS NEW BULLETIN

Improved Method Centrifugal SPRAY DRYER *and* CONCENTRATOR*

CONTRACT DRYING
We invite inquiries for Contract Drying in our fully equipped Stainless Steel Plant in Chicago. Shipments can be made direct to our Railroad Switch Track or Truck Docks.

THE DRYING AND CONCENTRATING COMPANY DRYER

Improved method for **DEHYDRATING**

Solutions, emulsions and materials which can be handled in a liquid form including:

Chemicals
Pharmaceuticals
Milk Products
Blood or Blood Plasma
Soups, Vegetables, etc.

This complete spray drying plant employs a unique Drying Chamber, Concentrator, Air Heating Unit, Air centrifugal-type spray head, and consisst of a Dry-Filter, Air Supply Fan, Powder Cooling Fans and Sanitary Pumps with variable speed drives for handling liquid material and controlling the moisture.

***CONCENTRATOR AVAILABLE SEPARATELY**

The Concentrator can be operated as a separate unit for reducing liquid products to almost any desired degree of concentration, almost instantaneously, retaining natural flavors and vitamins.

Write for New FREE Bulletin 265R

DRYING and CONCENTRATING CO.
933 SOUTH MICHIGAN AVENUE, CHICAGO, ILLINOIS

If you write maker identify as IEN - 2245

WHICH JOB WOULD YOU LIKE TO IMPROVE?

Listed below are some of the jobs discussed in Oakite's 44-page illustrated booklet on Metal Cleaning. Let us help you do them with better results, greater economy.

OAKITE PRODUCTS, INC., 16A Rector St., New York 6, N. Y.

Tell me about Oakite methods for the following jobs:

- ☐ Tank cleaning
- ☐ Machine cleaning
- ☐ Electrocleaning
- ☐ Pickling
- ☐ Pre-paint treatment
- ☐ Zinc phosphate coating
- ☐ Paint stripping
- ☐ Steam-detergent cleaning
- ☐ Burnishing, barrel cleaning
- ☐ Rust prevention
- ☐ ALSO send me a FREE copy of your booklet *"Some good things to know about Metal Cleaning"*.

NAME _____
COMPANY _____
ADDRESS _____

Technical Service Representatives in Principal Cities of U. S. and Canada

SPECIALIZED INDUSTRIAL CLEANING
OAKITE
MATERIALS • METHODS • SERVICE

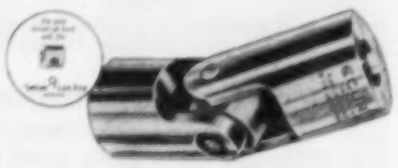
If you write maker identify as IEN - 2246

Concentration for Quality

Since 1919 Curtis has concentrated on the manufacture of only one line –

CURTIS UNIVERSAL JOINTS

As a result, Curtis research, production and quality control techniques have produced the widely accepted Curtis standards — and the world's best universal joints.



ONLY CURTIS OFFERS ALL THESE ADVANTAGES

Availability – 14 sizes always in stock; bored or unbored hubs. 6" hub diameter joints or special machining to specifications.

Simplicity—fewer parts, simpler construction.

Government Tests – complete equipment for government tests in our plant.

Not sold through distributors; write direct for free engineering data and price list.

CURTIS UNIVERSAL JOINT CO., INC.
7 Birnie Ave., Springfield, Mass.
As near to you as your telephone
Not sold through distributors

Trade Mark

A MANUFACTURER OF UNIVERSAL JOINTS SINCE 1919

If you write maker identify as IEN - 2247

how modern is YOUR filling equipment?

WHY NOT FIND OUT?

Write today for this new, free brochure

Here's valuable reading for packaging and production executives interested in cutting filling costs and speeding up production. Shows typical applications handling liquids, pastes, abrasives, both free and non-free flowing powders, melted materials up to 500° F., and many others including aseptic and explosive. Pictures manual, semi-automatic, and automatic equipment with filling speeds *up to 240 a minute with 99.7% mechanical accuracy!* Yours for the asking — mail coupon today. No salesman will call.

—CLIP AND MAIL—

G. DIEHL MATEER CO., Dept. I 54
Lincoln Highway, Devon, Pa.

Please send me the brochure "HOW MODERN IS YOUR FILLING EQUIPMENT?"

NAME_____

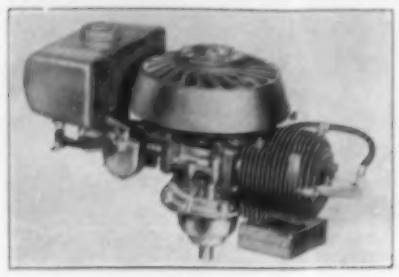
COMPANY_____

ADDRESS_____

If you write maker identify as IEN - 2249

ENGINE . . Two cycle gasoline, horizontal or vertical, rates 2 hp.

Source: POWER PRODUCTS CORP.
Power St., Dept. IEN, Grafton, Wis.



For equipment drive

Gasoline is mixed with the proper amount of air in a carburetor on this new Model-47 two-cycle gasoline engine. The air-gas mixture is admitted to the crankcase where it is compressed slightly before the charge enters the cylinder through the intake ports. Separate exhaust ports discharge the burned gases into the exhaust pipe and muffler. A power stroke occurs on each rotation of the crank shaft.

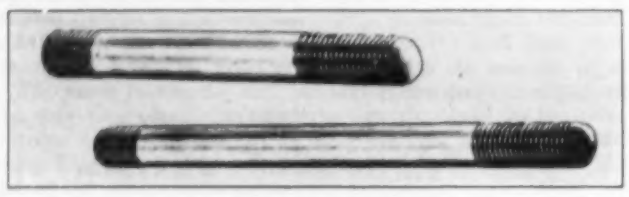
The engine is available in vertical and horizontal crank shaft assemblies with rating at 2 hp. and weight at 13 and 14¼ pounds. Length is 14½ and 13 inches. Height is 11 and 9 inches. Width is 8½ and 11½ inches. Bore is 2 in. and stroke is 1½ inches.

Construction employs ball bearings at both ends of the crank shaft. It is induction hardened at the rod bearing surface. Speed is governed by an enclosed flyball unit. The connecting rods are made of bronze and can be fitted with needle bearings to specification. A fan shroud and rewind starter are optional.

If you write maker identify as IEN - 2250

FASTENINGS . . Alloy steel studs for jigs, fixtures, ¼ to 1 inch

Source: JERGENS TOOL SPECIALTY CO.
712 E. 163rd St., Dept. IEN, Cleveland 10, Ohio



Heat treated precision units

New range of standard sizes includes alloy steel precision studs in sizes from ¼ to 1 inch with length in ¼-in. multiples to 12-in. maximum. The steel has tensile strength of 125,000 lb. per square inch. The studs are available from stock for immediate delivery.

If you write maker identify as IEN - 2251

TESTING . . Moisture meter for granular and fibrous materials

Source: HEYL & PATTERSON INC.
55 Fort Pitt Blvd., Dept. IEN, Pittsburgh 22, Pa.

The Olivo meter

Material to be tested for moisture content is poured, in predetermined amount, into the body of this new meter and a vial of calcium chloride is added. The instrument is agitated to break the vial and mix its contents with the material. Then the moisture content is read on the instrument scale in per cent of moisture.

The readings are accurate within 2 per cent of surface moisture as compared to standard air dried surface moisture results. A test cycle requires about 2 minutes. The material is wiped out and the meter is ready for another test after the reading has been taken.

If you write maker identify as IEN - 2252

Television equipment, employing a camera and receiver in a closed wire circuit, enables an operater located in the basement of a plant to control operations within the view of the camera. These operations include baling scrap steel, putting the bales on a conveyor and loading them into a gondola car. The operator also can move the car so it will be loaded evenly. Let us know if you want names of the television equipment manufacturers who can supply you for your own remote control operations.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 2253

VALET RACKS

END ALL "WRAPS" PROBLEMS

Reduce Absenteeism

— keep employees' wraps dry, aired, and in press

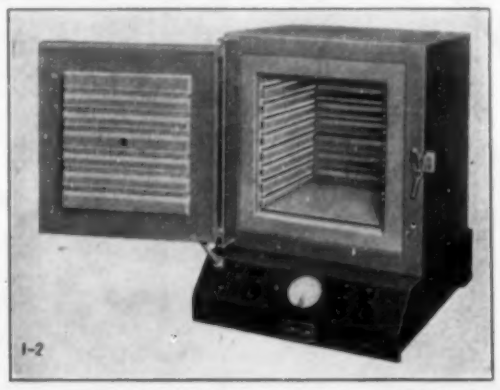
With Office valet wardrobe equipment employees do not face weather in damp clothing that has been crumpled in lockers, do not eat soggy lunches soaked by wet hats or mittens. The 4-foot 3-U rack, illustrated, accommodates 12 employees with spaced coat hangers, individual hat spaces, umbrella racks and overshoes shelf. Other units with or without lock boxes, in sizes or capacities for every office, store, warehouse, factory or institutional need.

Write for Bulletin OV 5

VOGEL-PETERSON CO.
1121 West 37th St. • Chicago 9, Ill.

If you write maker identify as IEN - 2254

Dyna-Trol Electric Furnace



Infinite **TEMPERATURE CONTROL UP TO 2000° F. & 2300° F.**

ZONE Temperature CONTROL — Temperature INDICATION

SEMI-AUTOMATIC
- Maintain Temperatures Accurately
- Duplicate Production Time-Temperature Cycles
- Duplicate Temperature Gradients by Zone Control
- Zone Temperature Indication by Pyrometer Selector Switch

AUTOMATIC
- Semi-Automatic Control Features Combined with Fully Automatic Hold and Cut-off Indicating Type Instrument

Prices Start at $165.00 — 40 Standard Models

Write for Complete Literature

INDUSTRIAL DIVISION
L&L MANUFACTURING CO.
CHESTER 30, PA.

If you write maker identify as IEN - 2255

IT'S NEW! It's Powerful! It's Low Priced!

STONE Model M-35

12" Cut-Off Machine

For Ferrous and Non-Ferrous Metals

CAPACITY
Ferrous—1½" solids, 2½" O.D. pipe, 2½" structurals
Non-ferrous—2½" solids, 3" tubing and extrusions

We are proud to present the newest member of our superior line of high speed cut-off machines. The M-35 has a full 3½ h.p. geared-in-head motor. The direct drive insures delivery of full power to the cutting edge. Result — faster cutting (3 seconds per square inch of metal) and greater wheel life.

PRICE
Completely Equipped Ready for Cutting
$445
F.O.B. Syracuse, N. Y.

MODEL M-75
Full 7½ h.p. geared-in-head motor. Will cut all ferrous and non-ferrous solids up to 2½", pipe and structurals up to 4". Can be equipped for wet cutting.

MODEL SS-20
Operates on guided rails for cutting larger structural steel, plate, sheets, with cuts up to nine feet in length. Cuts wet or dry.

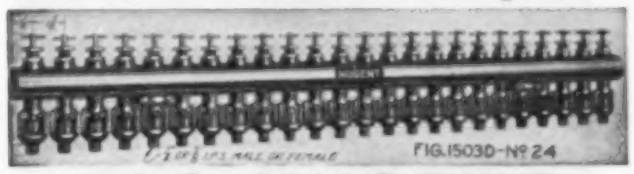
STONE ABRASIVE WHEELS
Cut 25% faster — average cutting time is 3 seconds per square inch of metal. Increased wheel life up to 25%. Write for prices.

For complete information write to

STONE MACHINERY CO., INC.
Fayette St. Manlius, N. Y.

If you write maker identify as IEN - 2256

LUBRICATE Hard-to-Reach Spots



with NUGENT Multiple Oilers

For machinery with many enclosed or hard-to-get-at bearings, you can reduce lubrication costs with a Nugent Multiple Oiler. Oil from a pump or reservoir is piped into the Oiler and is fed to the bearings by means of tubing through independently adjustable needle valves.

Nugent Multiple Oilers are furnished in a variety of types with any number of feeds to meet every requirement.

Write for descriptive literature

Wm. W. Nugent & Co., Inc.
418 N. Hermitage Ave. CHICAGO 22, ILLINOIS

Est. 1897

Oil Filters, Oiling and Filtering Systems, Telescopic Oilers, Oiling Devices, Sight Feed Valves, Flow Indicators . . . Representatives in Principal Cities

If you write maker identify as IEN - 2257

Here's the most complete line of wire-wound resistors on the market—a wider range of types, sizes, and ratings to fit your needs. There are fixed, tapped, adjustable, precision, and non-inductive resistors, with a variety of terminals and mountings. And, every one of these Ohmite resistors will give you long life and dependable, trouble-free performance.

OHMITE MFG. CO., 3619 Howard Street, Skokie, Ill. (Suburb of Chicago)

Write on Company Letterhead for Catalog No. 40

Be Right with
OHMITE
RHEOSTATS • RESISTORS • TAP SWITCHES

If you write maker identify as IEN - 2259

RECORD KEEPING . . Microfilmer for reduction ratios of 40 to 18 to 1

Source: EASTMAN KODAK CO.
343 State St., Dept. IEN, Rochester 4, N. Y.

For sale or rent

A total of 29,000 check size images or 28,000 cards, 3 by 5 in., can be microfilmed on a 100-ft. roll of 16-mm. film with this new Supermatic machine. Its automatic desk height feeder will handle 500 checks, small size cards or 200 letter size documents per minute. A separating device practically eliminates possibility of the documents overlapping. An electric counter records the number photographed. The machine will take documents to 11 in. in width and to any length.

Five reduction ratios are maximum are 40 to 1 and minimum at 18 to 1. The first four, down to 20 to 1, use a 16-mm. film. The lowest, 18 to 1, employs 35-mm. film and the duplex method of microfilming to obtain large, side by side, pictures of the fronts and backs of the counting forms, statistical records, and pages containing numerous closely spaced entries. This duplex method is one of three in which the machine can be applied. The other two include a Duo procedure that photographs the fronts of documents down to one-half of the film width and then photographs up the other half. The standard method employs the full width of film for each exposure.

Control centers at a single switch. Work is ejected in original sequence to an eye level receiving hopper. Desk space is provided in front of the machine to assemble documents prior to microfilming. Interchangeable lens assemblies are employed for each of the reduction ratios. The machine lists at $3,300 with one lens assembly or can be rented for $76.50 per month. Film readers and additional lens assemblies are available separately to suit a given application.

If you write maker identify as IEN - 2260

SOLDERING . . Electric iron applies heat at copper wire loop

Source: WELLER ELECTRIC CORP.
808 Packer St., Dept. IEN, Easton, Pa.

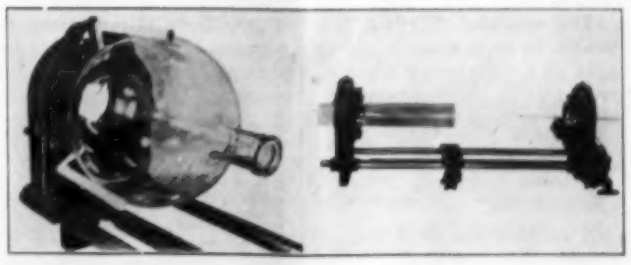
Model D-550

Rating is 250 watts in a single heat assembly and 200-275 watts in a dual heat unit, both of which have been added to the company's line of electric soldering tools, previously described IEN-9290-50. Two spotlights, one on each side of the extension fingers, illuminate the work. The replaceable tip is small enough to reach into confined locations and strong enough to stand up in day by day use. Control centers at a trigger type switch. The housing is made of high impact plastic.

If you write maker identify as IEN - 2261

GLASS WORKING . . Lathe to make fittings, ring seals, closures

Source: BETHLEHEM APPARATUS CO.
823 Front St., Dept. IEN, Hellertown, Pa.



For laboratory and production

New Lab-Lathe takes tubing to 4 in. in diameter through its head stock and tail stock. It swings 16 in. in diameter, will hold work to 12 in. in diameter in its sleeve grip chuck. It is driven by a 1/12-hp. 110-volt ac. motor mounted on the bed at the right hand end. The motor drives a pinion bar extending from the right to the left hand end where it is geared to the head stock spindle.

The tail stock rides the two steel bars that form a non-warping bed. These bars also carry a floating burner carriage. Pivoted feet at the tail stock end permit setting the lathe up horizontally or vertically. A brake, at the motor end of the drive, completes the assembly. Length between the head stock and tail stock chucks is maximum at 36 inches. Normal speed is 32 rpm. The machine weighs 150 pounds.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 2262

181-A

UNIVERSAL ENGINEERING COMPANY
FRANKENMUTH 6, MICHIGAN

If you write maker identify as IEN - 2263

Starrett
*Satin Chrome**
MICROMETERS
with FRICTION THIMBLE*
plus DIRECT FEEL

Only Starrett Micrometers offer you this modern convenience plus 12 other big features. Get them all by insisting on STARRETT Micrometers. Your industrial distributor will give you prompt, dependable, quality service.

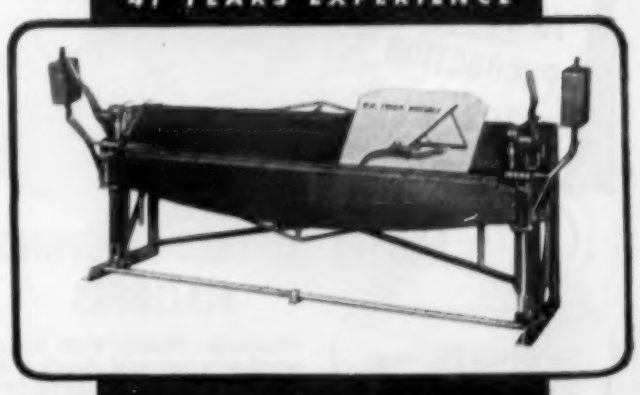
Starrett *Friction Thimble Micrometers* give you both *friction control* and *direct feel* in a micrometer designed for easy, one-hand use. An improved friction control mechanism built into the upper portion of the thimble is "right under your thumb" for fast, accurate repetitive measurements. Lower section of the thimble is integral with the spindle with location and large diameter just right for quick control and "direct feel" on critical measurements.

*Pioneered and Developed by The L. S. Starrett Co.

Starrett
"WORLD'S GREATEST TOOLMAKERS"
MECHANICS' HAND DRAGOUTS
TOOLS AND PRECISION INSTRUMENTS · DIAL INDICATORS · STEEL TAPES
PRECISION GROUND FLAT STOCK · HACKSAWS, BAND SAWS AND BAND CUTTERS
THE L. S. STARRETT COMPANY, ATHOL, MASSACHUSETTS, U. S. A.

If you write maker identify as IEN - 2264

WHITNEY METAL
TOOL COMPANY
41 YEARS EXPERIENCE



WHITNEY-JENSEN
ROLLER BEARING
BENDING BRAKES

A modern departure from conventional hand brake design. Work is not limited to straight bending and box and pan work alone. Special attachments permit many intricate forming operations! Made in 16, 14, 12 gauge capacities; 4, 5, 6, 8, and 10-foot sizes.

WHITNEY METAL TOOL COMPANY
200 FORBES STREET, ROCKFORD, ILLINOIS

If you write maker identify as IEN - 2265

1 man handles Sheet Steel Faster, Easier with a C-F LIFTER

C-F Lifters, under one man operation, pick up, carry and unload more sheet steel tonnage per hour than any other method – and at lower cost per ton. Wide carrying angles hold sheets securely – won't damage high grade sheets; tong action insures safe carrying; fast opening and closing adjustments of Lifter jaws permit shifting from one size pack to another in seconds. C-F Lifters are made in standard or semi-special models to handle from 2 to 60 tons.

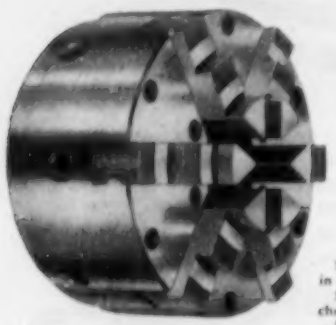
Write for Bulletin SL-28 for specific examples of C-F Lifter operation and economy.

CULLEN-FRIESTEDT CO.
1310 South Kilbourn Avenue • Chicago 23, Illinois

If you write maker identify as IEN - 2266

YOU SAVE Every Time You Use Buck AJUST-TRU CHUCKS

Pat. No. 2639157



This is the only universal scroll chuck with .0005" precision. It is used on lathes, grinders, dividing heads, screw machines. Does most of work formerly requiring stub arbors, mandrels, special fixtures.

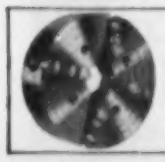
Save machinists' time — lines up dead true in one minute, without shims . . .
Save operators' time — holds .0005" rechucking precision on duplicate parts . . .
Save collet and step-collet costs — the AJUST-TRU does the work of hundreds of dollars worth of collets . . .
Save distortion on tubular work . . .
Save scratches on ground, polished, work . . .
Save time and expensive holding fixtures on many grinding operations . . .
Save chuck wear — it takes up wear in use . . .
More than ever today, you need the economies of Buck chucks. Send for latest catalog.

6 JAWS

OR 3 JAWS

3-jaw and 6-jaw models in 4", 5", 6", 7½", and 9" sizes. 2-jaw Aviation chucks, for holding odd shaped parts in 6", 7½, and 9".

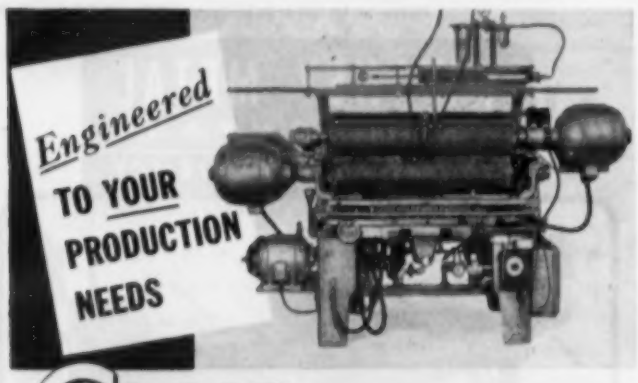
BUCK TOOL COMPANY
216 SCHIPPERS LANE • KALAMAZOO, MICH.



NEW SUPER-GRIP 4-JAW
INDEPENDENT CHUCK FOR 9" to 16" LATHES

Most chucks for 9" to 16" lathes are either too light and cheaply made to hold work securely, or too heavy for the lathe and clumsy to handle. Here's the happy medium — a chuck with ideal weight, providing much more "holding power" from its ½" larger diameter, finely threaded screws. Also eliminates ¼" overhang . . . improves accuracy . . . permits heavier cuts. 6", 8" and 10" models. Send for latest catalog.

If you write maker identify as IEN - 2267



CLAIR SURFACE FINISHING MACHINES

For Surface Finishing:
screw drivers, chisels, pliers, saws, wrenches, compacts, cigarette cases, fine silver, surgical instruments, fan blades, flat iron sole plates, many other similar items

Working closely with your engineers we will develop a custom machine designed for maximum surface finishing efficiency on your particular application. Totally enclosed, abrasion-proof hydraulic circuits assure uninterrupted production and vastly reduced maintenance costs.

CLAIR MANUFACTURING CO., INC.
Specialized Machine Equipment For Glazing and Polishing Operations
OLEAN, N. Y.

If you write maker identify as IEN - 2268

CONTROL . . Tracer attachment for contour machining to wood pattern

Source: TRUE-TRACE SALES CORP.
2303 Chico Ave., Dept. IEN, El Monte, Calif.

Accurate to 0.005 inch

Contour machining in three dimensions is controlled by this new hydraulic Model A-3D tracer to duplicate a wood, plaster or metal pattern. The operator sets the pattern up beneath the tracer head as shown in the illustration. He moves the tracer finger over the surface to guide a milling cutter in a 1 to 1 ratio.

The attachment is particularly suited for production of irregularly contoured parts in comparatively small number without excessive tooling costs. The tracer head alone lists at $2,750. Additional equipment includes the hydraulic power unit, cylinders, mounting bracket, hydraulic lines and fittings.

If you write maker identify as IEN - 2269

HEATING . . Electric furnace heats work to 1,750 deg. F. to process

Source: BLUE M ELECTRIC CO.
306 W. 69th St., Dept. IEN, Chicago 21, Ill.

Built to order

Portability, with mounting on casters, features construction of this new electric furnace. It can be moved to processing equipment such as that for forming, forging, spinning, dimpling, stretching, to heat work for the processing operation. The furnace provides uniform heat by means of its stainless steel motor driven fans. They circulate the air in the heating chamber. Heat is provided by Modelia elements rating 100 kw. The fans are turned on and shut off upon closing and opening the door. The fan blades are protected against contact with the work. Temperature is regulated electronically by standard equipment.

If you write maker identify as IEN - 2270

TRUCK . . Four-wheel platform unit equipped with hand released brake

Source: TOWSLEY TRUCKS INC.
1766 Elmore St., Dept. IEN, Cincinnati 23, Ohio

Hand-O-Matic

The company announces development of a new spring set, hand released brake for application on any standard truck such as the unit shown in the illustration. Brake shoes engage the main wheels and are carried on a spring operated bar with link connection to a lever at the caster end of the truck. This lever reaches upward to terminate in a double hand grip.

The operator moves this hand grip inward to release the brake. If he releases his grip the brake is reset. It holds and acts as a lock brake when the truck is not in use. A pin can be inserted in the brake lever to secure the brake in either stop or release position.

If you write maker identify as IEN - 2271

A carbide die drill manufactured by Whitman & Barnes, 40600 Plymouth Road, Dept. IEN, Plymouth, Mich., was em-

ployed to salvage a stainless steel machine part valued at $125. It would otherwise have had to be scrapped. A high speed tap was broken while threading a hole in the part and could not be removed by any means at the manufacturer's disposal until the die drill was employed. It measured ⅜ in. in diameter and was used to drill the broken tap to a depth of ½ in. so the flutes could be broken off and the pieces removed. The drill was operated dry at high speed. It became nearly white hot but did not fail.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 2272

For Access Panel and Door Assemblies

QUICK-LOCK speeds up mounting and demounting detachable panels. A 90° turn locks and unlocks it in a jiffy. Flexible mounting and tapered stud makes it ideal for assembling curved sheets and insures a tight fit when locked. Stud is self-ejecting when unlocked. Minimum deflection is assured—only initial loads are carried by the helical spring. Solid supports take up increased loads.

Call in a Simmons Engineer and compare QUICK-LOCK's economy with your present fastening method.

SIMMONS FASTENERS
SPRING-LOCK • QUICK-LOCK • ROTO-LOCK
SIMMONS FASTENER CORP. • 1758 N. Broadway, Albany, N. Y.

If you write maker identify as IEN - 2273

"TEFLON" SEALING

Exclusively at Graef Engineering Company

Seal maintains all the desirable properties of "TEFLON"
Extreme chemical resistance
High temperature stability
Superior electrical properties
Non-adhesion
Allows fabrication from "TEFLON" film

POTENTIAL APPLICATIONS

"TEFLON" bonded to "TEFLON"	"TEFLON" bonded to Metal
Bags and Sacks	Valve Discs
Tank Liners	Vat Liners
Containers	Capacitors
Protective Clothing	Protective Coatings
	Heat Sealers

Write us for full details

GRAEF ENGINEERING COMPANY
P. O. Box 416, Clearwater Station
Paramount, California

If you write maker identify as IEN - 2274

Increase Production . . .

REDUCE FATIGUE*

Durable Sponge Rubber

STANDING MATS

*Fatigue robs you and your business! Long hours of standing, dampness and vibration take their daily toll of efficient help!

Production line workers, machine operators, store clerks, EVERYONE works better when using Durable Standing Mats. They're safe—the beveled edges prevent tripping, the corrugated top is non-slip! Factories, institutions and stores all over the nation have PROVEN the effectiveness of DURABLE SPONGE RUBBER STANDING MATS.

Available in all sizes up to 35 x 4-feet

Write for free sample and current price list

Durable RUBBER PRODUCTS CO.
549 WEST FULTON STREET
CHICAGO 6, ILLINOIS

If you write maker identify as IEN - 2275

Move Air or Fumes ECONOMICALLY with new PORTOVENT* Ducting

Available in sizes 4 in. ID to 36 in. ID

11 in. diameter PORTOVENT extended and compressed.

This new spiral-wire reinforced ducting has many features which can mean savings in time and money.

First cost is low. Portovent is easy to connect and install. It can be cut to any length on the job with no weakening or raveling, because it has fully bonded seams. Portovent has excellent lengthwise compressibility . . . is easy to transport and store . . . maintains large sections on sharp bends . . . has excellent air flow characteristics.

Portovent is made with Nylon base (Type SY) or cotton base (Type SC). Both are impregnated with age-resisting Neoprene compound.

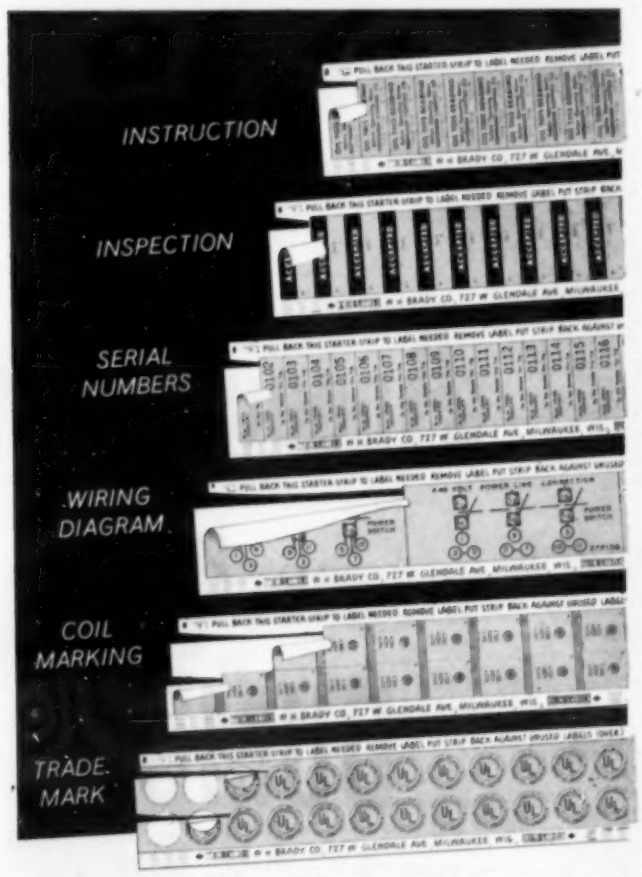
Write today for details on this new Portovent Ducting.

*Trade-marks

THE FLEXAUST COMPANY
Dept. IE-2, 100 Park Avenue, New York 17, N. Y.
Formerly American Ventilating Hose Co.

FLEXAUST* PORTOVENT* BLOFLEX*

If you write maker identify as IEN - 2276



Self-sticking BRADY-LABELS *in whatever shapes, colors, sizes, quantities YOU need!*

Special BRADY QUIK-LABELS fill the bill, no matter what your labeling requirements. Your choice of cotton cloth or acetate cloth, glass fibre, paper, cellophane, plastic or acetate fibre label materials printed in any wording, any colors, to your specifications. Pre-cut to exact size, they come mounted on handy Dispenser Cards ready for use. Brady Self-Sticking Labels are instantly released from Cards by exclusive *zipper-action* Starter Strip. We've successfully solved tough identification problems for hundreds of manufacturers. What's yours? Chances are we have the answer Write today for FREE SAMPLES and useful literature.

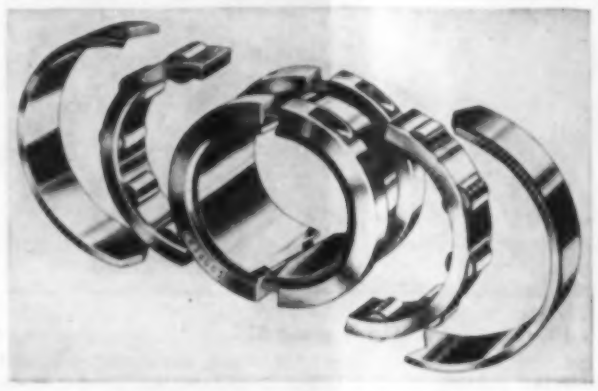
WIRE MARKERS · PIPE MARKERS · SAFETY SIGNS · AISLE MARKERS · MASKS & STENCILS · PRINTED ROLL TAPES

MANUFACTURERS OF SELF-STICKING PRODUCTS
W. H. BRADY COMPANY
745 W. GLENDALE AVE. • MILWAUKEE 12, WIS.

If you write maker identify as IEN - 2278

BEARING . . Split roller design to clamp on shaft, 1-3/16 to 12 inches

Source: COOPER SPLIT ROLLER BEARING CORP.
700 Cedar Blvd., Dept. IEN, Pittsburgh 28, Pa.



Bulletin, "Cooper Split Roller Bearings'

Medium, heavy and extra heavy designs for free floating action, or to take thrust as well as radial load, are included in this line of English bearings, new in the United States. Races and rollers are made of high carbon chromium alloy steel, through hardened and finish ground. The roller cage halves are aluminum alloy. The races are split diagonally to provide continuous support for the rollers at joining points.

The two halves of the inner race are clamped on a shaft by locking collars. The assembly is completed by placing the halves of the cage with the rollers and the outer race into position. These, in turn, are housed in a split cartridge. The exterior of the cartridge is machined spherically for self-aligning action in a pillow block housing or in a machine in which the bearing is to be employed.

The company has installed distributor stocks, a central warehouse stock and offers six-week delivery of specials. It has prepared literature illustrating, describing and specifying various designs with data to assist in selection.

If you write maker identify as IEN - 2279

GRINDING . . Silicon carbide wheels to rough and to finish carbide tools

Source: FULLER MERRIAM COMPANY
70 Water St., Dept. IEN, New Haven 16, Conn.

Prices on request

SiClone trade names the company's new line of silicon carbide grinding wheels, particularly to sharpen carbide tools. In stock, for immediate delivery, are five plate mounted sizes between 6 by 1 by 4 in. and 14 by 4 by 11 inches. These wheels are for rough grinding.

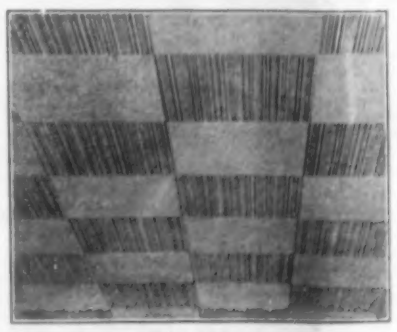
Included are two sizes for use in the Easymount chuck as well as for grinding machines to take plate mounted wheels. These two measure 13.495 by 4 in. and 9.620 by 2 inches.

The wheels are characterized by a new vitrified boud and by distribution of the abrasive for penetration and efficient cutting action. Each wheel is available in a range of grit and grade combinations.

If you write maker identify as IEN - 2280

BUILDINGS . . Acoustical tile made of non-flammable porous Fiberglas

Source: OWENS-CORNING FIBERGLAS CORP.
100 Nicholas Bldg., Dept. IEN, Toledo 1, Ohio



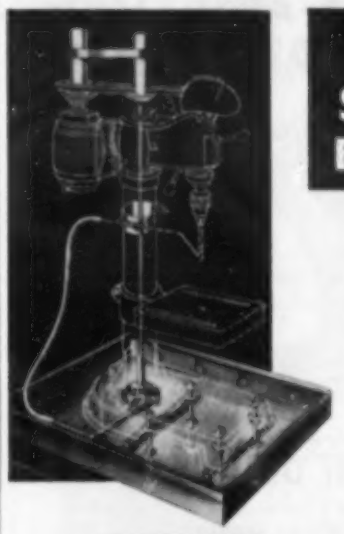
Attractive ceiling

Sound waves are trapped in the porous surface of this new Stria Acoustical Tile to provide a noise reduction coefficient of about 80 per cent. The tile is available in 12 by 12-in. and 12 by 24-in. sizes. It is intended primarily for decorative ceiling construction. Multiple striations or grooves, permit a variety of ceiling patterns. Light striking the tile provides an optical illusion of two basically different patterns as illustrated.

The surface reflects about 75 per cent of the light striking it. The material is dimensionally stable, fire safe, will not rot, absorb or give off odors. It will not warp, buckle, expand or contract under varying conditions of temperature and humidity. Dirt can be removed with fresh wall paper cleaner or by vacuum. The surface can be spray painted as many as eight times, with a non-bridging water base paint, without affecting the noise absorbing characteristics.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 2281



The WADE "Simplicity" COOLANT PUMP SAVES ITS COST EVERY WEEK in:

- Operator time & efficiency
- Faster speeds and feeds
- Longer drill life, 50% up
- Exact size control and superior finish

PAYS FOR ITSELF the FIRST WEEK—then goes on paying you 100% dividends every week for many trouble-free years.

NO EXTRA MOTOR
Work off tool's own power. Start and stops with drill.

SO INEXPENSIVE
That all tools needing coolant can be permanently equipped. Saves shifting bulky tanks and cumbersome rigging.

IDEAL REPLACEMENT
Permits transfer of high-cost coolant units to big heavy machines.

PREVENTS ELECTRIC SHOCK
and short circuits. Dangers so common with ordinary coolant systems are impossible with Wade.

100% OUT-OF-THE-WAY
Nothing on the floor to kill space and trip over, nothing to impede the operator's efficiency.

SAVES HIGH-PRICED TIME
No man hours wasted in hand applying of coolant or switching units from one tool to another. For want of this permanent automatic coolant supply, the average machinist loses enough time every few days to pay for the Wade's lifetime of service.

Get the COMPLETE STORY!
Call Your Supplier or Write Direct

WADE & SONS, 948 E. Truman Road, Independence, Mo.
division of Independence Pattern and Machine Works • Phone CLifton 9129

If you write maker identify as IEN - 2282

IT'S QUIET *because it's* SUPER-SONIC!

Chicago Pneumatic's new CP-3008 is a really quiet air powered screwdriver. Its Super-sonic exhaust changes sound waves to a frequency which approaches the limit of human hearing. It weighs only 1 lb. 14 oz. Has built-in speed control for precision driving on delicate work. Torque easily adjusted without special tools. Has #4, #6 and #8 screw capacity. Will handle some #2's and #10's. Write for Bulletin SP-3096.
Chicago Pneumatic Tool Co., 8 East 44th St., N. Y. 17, N. Y.

Chicago Pneumatic

PNEUMATIC TOOLS • AIR COMPRESSORS • ELECTRIC TOOLS • DIESEL ENGINES
ROCK DRILLS • HYDRAULIC TOOLS • VACUUM PUMPS • AVIATION ACCESSORIES

If you write maker identify as IEN - 2283

standardize on standard UNBRAKO SOCKET CAP SCREWS

Knurled heads for sure finger grip and fast assembly; accurate hex sockets for positive, non-slip internal wrenching; made of heat treated alloy steels. Fully formed threads, Class 3 fit. Controlled fillet and continuous grain flow assure unusual strength. Available in standard sizes from #4 to 1" in a full range of lengths. Stocked by your local industrial distributor. To save time and money, write for UNBRAKO Standards. STANDARD PRESSED STEEL Co., Jenkintown 14, Pa.

UNBRAKO SOCKET SCREW DIVISION **sps**
JENKINTOWN PENNSYLVANIA

If you write maker identify as IEN - 2284

NEW SELF-ADJUSTING BLOW RINGS

Patented By DAY and HERSEY

FOR MORE EFFICIENT DUST FILTERING

DAY "AC" Dust Filters are now better than ever with Self-Adjusting Blow Rings compensating for even the slightest variation in the filter tubes due to changes in pressures, temperatures, moisture conditions, etc. This improvement to a widely acclaimed dust filter assures you added efficiency and economy in controlling dust.

DAY SINCE 1881 DUST CONTROL A SINGLE UNIT OF A COMPLETE SYSTEM

WRITE toDAY FOR BULLETIN (528-R)

It contains new information on dust control.

The DAY Company
813 3rd Ave. N. E.
MINNEAPOLIS 13, MINN.
IN CANADA: P.O. Box 707, Ft. William, Ont. Branch Plants in Buffalo, Ft. Worth and Welland, Ont.

If you write maker identify as IEN - 2285

FAST! EASY! convenient...

MANAGEMENT: For Copying Letters, Reports, Contracts, Instructions, Statistics, Etc.

SALES: For Copying Orders, Letters, Inquiries, Presentations, Price Sheets, Etc.

PHOTOCOPYING

MANUFACTURING: For Copying Schedules, Work Sheets, Control Sheets, Master Records, Inventory Records, Etc.

SHIPPING: For Copying Receipts, Claims, Freight Bills, Packing Slips, Bills of Lading, Etc.

Use It To Copy ANYTHING right in your own office!

APECO Systematic Auto-Stat

EVERY DEPARTMENT can use the Apeco Systematic Auto-Stat. This new all electric photocopying machine prints, processes and dries automatically. It's fast—dry copies in less than 45 seconds! It's convenient—fits on the corner of any desk . . . it's ready for instant use! It's easy—anyone can operate it! Saves up to 80% on copying jobs. Eliminates retyping, hand copying, checking or costly outside copying service. Makes legally accepted black and white or colored copies from any original up to 11" x 17"—printed on one or two sides. So low cost—a complete Apeco Systematic Auto-Stat installation is priced well within the budget of even the smallest firm.

Lifetime Service Guarantee

NEW COMPLETE PHOTOCOPY INFORMATION KIT—IT'S FREE

American Photocopy Equipment Co.
1910 W. Peterson, Chicago 26, Illinois

RUSH ME NEW PHOTOCOPY INFORMATION KIT containing booklet on the Apeco Auto-Stat plus separate folders on copying tax returns, color copying and copying on preprinted forms.

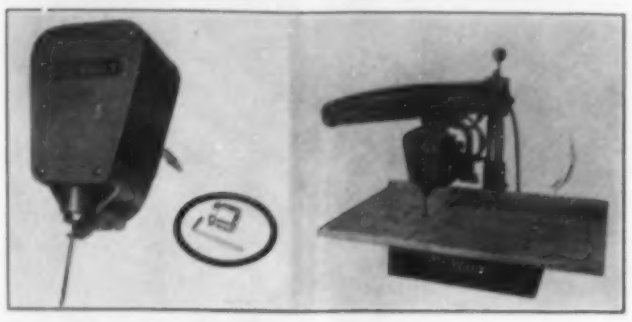
Name_____
Firm_____
Address_____
City_____ State_____

In Canada: APECO OF CANADA, LTD., 134 PARK LAWN ROAD, TORONTO, ONT.

If you write maker identify as IEN - 2287

WOOD WORKING . . Saber saw head mounts on company's radial arm machine

Source: DE WALT INCORPORATED
63 Fountain Ave., Dept. IEN, Lancaster, Pa.



List is about $25

Exterior curves, blind interior scroll work, bevel curves and work requiring large area capacity can be handled with this new saber saw head on the company's Model MB or GW radial arm machines. The head applies on the motor brackets of the radial machine in place of the blade guard. It is belt connected to the motor shaft to convert the rotary motion into reciprocating action for the blade.

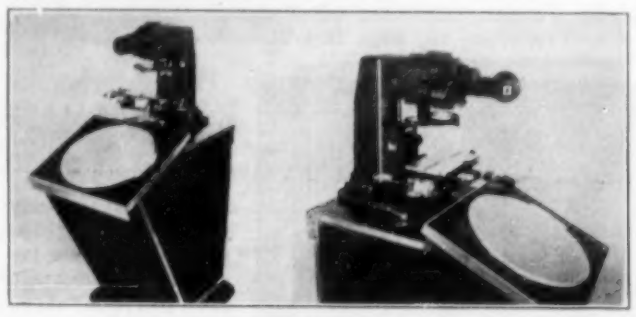
The head can be employed to cut stock 2 in. in thickness when set square. It can be angled for bevel cutting and located at the extreme end of the radial machine arm to provide capacity to 27 in. between the blade and column.

The reciprocating mechanism is enclosed and includes oil impregnated bearings so lubrication is not a factor. It can be applied or removed in about a minute to permit normal use of the radial arm machine. When it is in use the saw blade extends down through a small hole bored in the radial machine table. The head and machine are locked in stationary position while the work is fed to the blade. A blower removes sawdust from the guide line.

If you write maker identify as IEN - 2288

GAGE . . Optical comparator 10X to 100X, mounts a 16 in. screen

Source: PORTMAN INSTRUMENT CO.
Town Rock Road, Dept. IEN, New Rochelle, N. Y.



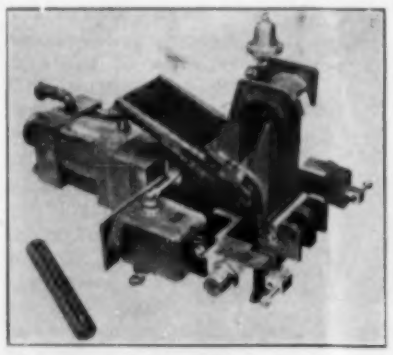
Color filters can be used

The work image projected by the new Multi-Phase optical equipment is upright and properly oriented with clear definition and screen brightness on this new Model R-300 Comparator. Long focal length at each magnification provides ample work space clearance between the lenses and the object stage. Change can be made from one magnification to another by operating a lever. A plain platform type stage or a universal coordinate measuring stage can be employed.

The light source is equipped with variable volume control. It is blower cooled and illuminates the 16-in. screen uniformly. The light housing is equipped to use a three-position turret-mounted color filter holder attachment. The screen is located for observation free from reflection or glare so no hood or visor is required. Overall dimensions are 23½ by 38 by 63 inches. Weight is 450 pounds.

If you write maker identify as IEN - 2289

Hydraulic feed and clamp fixture takes cylindrical work pieces, feeds and clamps them, two at a time, in position to broach flats and to square the ends in a single-ram broaching machine. The unit shown handles automotive transmission control rods measuring ⅞ in. in diameter by 6 in. in length. Two parts drop into position from the slopping magazine when the vise jaws are retracted. They are pushed forward against stops by the hydraulic cylinder. The air booster employed with this cylinder applies clamping pressure. Pressure rise in the Hydraulic cylinder "triggers" the broaching machine. The machine, in turn, initiates release of the clamping pressure when it reaches the bottom of its stroke. Unloading dogs on the broach holder lifts the parts out of the vise jaws and drops them into a curved chute when the broach returns upward. National Broach and Machine Co., 5602 St. Jean Ave., Dept. IEN, Detroit 13, Mich., can supply the fixture.



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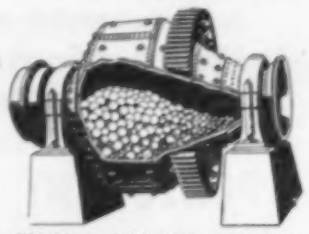
If you write maker identify as IEN - 2290

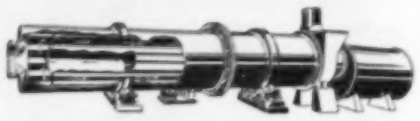
HARDINGE EQUIPMENT

for . . .

Clarifying
Classifying
Drying
Feeding
Filtering
Grinding
Pulverizing
Thickening



CONICAL, TRICONE, ROD AND CYLINDRICAL GRINDING MILLS



RUGGLES-COLES ROTARY DRYERS, KILNS, COOLERS

"AUTO-RAISE" THICKENERS CLARIFIERS, AND HYDRO-CLASSIFIERS

Write for Bulletin 100-38

HARDINGE COMPANY, INCORPORATED

YORK, PENNSYLVANIA · 240 Arch St. · Main Office and Works

New York · Toronto · Chicago · Hibbing · Houston · Salt Lake City · San Francisco

If you write maker identify as IEN - 2291

Announcing a new DUMORE® Precision Handgrinder

DUMORE

VOLTAGE — 115 AC-DC
CURRENT — 1.4 amps
HORSEPOWER — 1/10
SPEED, no load — 22,000 rpm
DUTY CYCLE — continuous
BEARINGS — ball
WINDING CONNECTION — series
VENTILATION — internal fan
TEMPERATURE RISE — 40° C
FINISH — grey
WEIGHT — 3 lbs., 1 oz. with cord
2 lbs., 10 oz. without cord
LENGTH — inc. chuck 10-1/4"
SMALL DIA. — 1-5/16"
BODY DIA. — 2-7/16"

DUMORE PRECISION TOOLS
The Dumore Company
1319 Seventeenth Street
Racine, Wisconsin

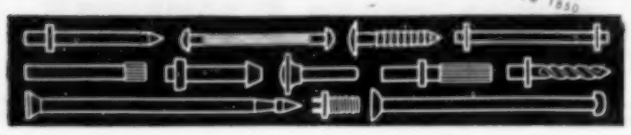
If you write maker identify as IEN - 2293

WRITE FOR FREE fastener catalog

A complete, comprehensive handbook on cold-headed nails, rivets, screws and other special fasteners. Check on ways to improve your assembly cost-wise, appearance-wise and from a standpoint of maximum effectiveness at minimum cost. One hundred years of experience are at your service. Write for price quotations or for suggestions on the redesigning of your present assembly.

JOHN HASSALL, INC.
P. O. Box 2169 • Westbury, N. Y.

Hassall
ESTABLISHED 1850



If you write maker identify as IEN - 2294

New Super-10 Precision Handgrinder

Here's new speed and better balance for full-shift precision tool and die work

NOW . . . get greater accuracy through better balance with this completely redesigned and improved version of the popular Dumore Series 10 Handgrinder. *Powered by a 1/10 hp continuous-duty-rated Dumore Universal motor,* the Super-10 assures greater precision with less fatigue . . . provides perfect balance for close tolerance control on fine work. For use with vitrified wheels up to 1" in diameter, the Super-10 is available in three chuck sizes — choose from a 1/8" or 1/4" collet chuck, or a No. 0 Jacobs chuck, 0 to 1/8" capacity.

For complete information, see your Industrial Distributor, or write —

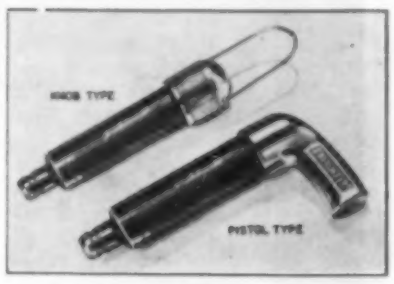
DUMORE PRECISION TOOLS
The Dumore Company
1319 Seventeenth Street • Racine, Wisconsin
Builders of a precision line of Grinders, Automatic Drill Heads, Tool Post Grinders, Drill Grinders, Light Drilling Equipment, Flexible Shaft Tools, Handgrinders, Fractional hp Motors and Gear Motors.

WATCH FOR IMPORTANT ANNOUNCEMENT NEXT MONTH!

If you write maker identify as IEN - 2296

HAMMER . . Pneumatic tool for general light duty applications

Source: BURGESS THOMAS CO.
Box 287, Dept. IEN, Bloomfield, N. J.



No recoil action

Pressing this new hammer against a work surface starts it into operation. Releasing the pressure stops the hammer action. The unit measures 9¾ in. in length by 1⅝ in. in barrel diameter. It is available in two hand styles as shown in the illustration. Weight is about 5 pounds. Operating air pressure ranges from 30 to 100 pounds. The tool takes points for chipping, trimming, scaling, sealing, rock drilling.

If you write maker identify as IEN - 2297

CAPACITOR . . Tubular oil filled, hermetically sealed, stud mounting

Source: INDUSTRIAL CONDENSER CORP.
3243 N. California Ave., Dept. IEN, Chicago 18, Ill.

Catalog 1134 on request

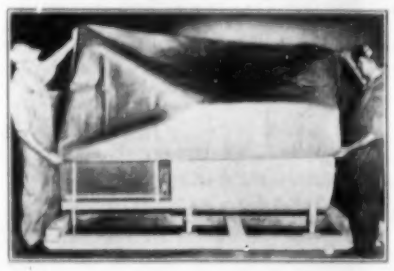
The company announces addition of new ratings to its Indco line of oil filled capacitors, previously described IEN-13830-52. The new units rate 8 mfd. and dual 4 mfd. at 600-volt dc., 4 mfd. and dual 2 mfd. at 1,000-volt dc. and 2 mfd. at 1,500-volt dc. Diameter ranges from 1½ to 2⅞ in. with height at 2 to 4½ inches. Temperature range is minus 40 to plus 70 deg. F. Pyroteen filled units are also available for a range from minus 70 to plus 90 deg. C.

The molded mounting neck is locked in the capacitor and is gasketed. The case is insulated from the terminals in standard construction. Solid nuts and lock washers are provided.

If you write maker identify as IEN - 2298

PACKAGING . . Treated paper bag covers and protects large assemblies

Source: CENTRAL STATES PAPER & BAG CO.
5221 Natural Bridge, Dept. IEN, St. Louis 15, Mo.



Tailored to fit

Illustrated is application of the new large size bags made of the company's treated Pro-Tex-Mor paper for use in place of wrapping paper on large assemblies. The bag protects the assembly prior to shipment. It keeps it clean. It prevents marring finished surfaces at points where a crate and corrugated pads press against it. The company is prepared to manufacture the bag in specified size and quantity.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 2299

temperature conversion tables

FREE

C to F and F to C

. . . stops guesswork on surface temps. The PANDUX gives linear thermal readings to ±2° full-scale accuracy. Unit sealed against corrosive atmospheres. Mirror dial protects element against external radiation. Easy to affix to surfaces with magnet or silicone grease. 2" in diameter; weighs 1 oz. Fully guaranteed. Specify model wanted.

Order today.

For checking: ■ Pipes and ducts ■ Dies and molds ■ Freezers, ovens, boilers ■ Ceilings, walls and floors ■ Motors and cylinder blocks ■ Bearings and journals ■ And hundreds of other vital uses

ONLY **$6.75** Complete with magnet clamp and 1/2 oz. of silicone grease.

Model 309F: −50°F to 250°F
Model 309C: −50°C to 110°C
Model 310F: 0°F to 300°F
Model 310C: −10°C to 150°C
Model 311F: 70°F to 370°F
Model 311C: 20°C to 180°C

Write for FREE Temperature Conversion Chart No. IEN 254

PACIFIC TRANSDUCER CORP.
11921 W. Pico Blvd.—Los Angeles 64, California

If you write maker identify as IEN - 2300

NEW T&B ENGINEERED strain relief connector

- fits wide range of cable diameters
- oil-tight

For positive strain relief for all types of portable cords and cables, you'll find these new T & B connectors hard to beat. Just check the features below, we know you'll be convinced. T43

1. Brass retaining ring minimizes take-up friction . . . prevents damage by eliminating cable twisting.
2. Tabolite-finished steel gland nut . . . rust-proof, die-cast zinc alloy body.
3. Taper on both body and bushing gives double the take-up . . . assures a firm, permanent grip on any cable. Each fitting accommodates a wide range of cable diameters . . . you need stock only ½ your usual inventory.
4. Neoprene bushing is unaffected by oil, water, sun, or chemicals.
5. Available for .250" to 1.205" diameter cable.

Write for sample

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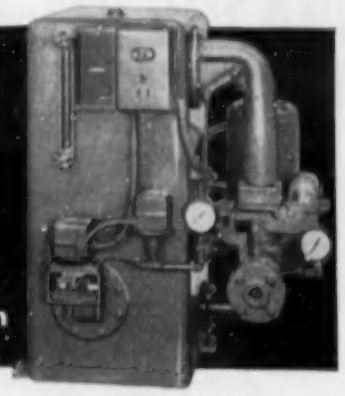
Incorporated
60 Butler Street, Elizabeth 1, New Jersey
Thomas & Betts Ltd., Montreal, P.Q., Canada
MANUFACTURERS OF FINE ELECTRICAL FITTINGS SINCE 1898

If you write maker identify as IEN - 2301

DUNHAM VACUUM PUMPS

money savers in *any* boiler room



If there's any steam up in your boiler at all, Dunham Vacuum Pumps will get it around . . . fast enough to lower fuel bills.

Fast Steam Circulation? Yes. Pump pulls up to 26" of vacuum at no greater amp. load than when pulling 5".

Staying Power? You bet. *No close clearance parts* . . . only one principal moving part. You can virtually write off expensive repairs.

Installation Costs? Reduced . . . since return line connections are at such a low level (only 9⅛"). No need for expensive pitting. Single motor easily handles *both* air and condensate removal. For full information, write for BULLETIN IEN-2.

DUNHAM HEATING SYSTEMS AND EQUIPMENT
Quality First for Fifty-one Years
C. A. DUNHAM COMPANY, 400 W. Madison St., Chicago 6, Illinois

If you write maker identify as IEN - 2302

standardize on standard

HALLOWELL SOLID STEEL COLLARS

now size-marked for easy identification

42 stock sizes—each marked with shaft diameter for easy identification—are now available at your HALLOWELL distributors'. And these precision machined solid steel collars—in sizes from 3/16" to 3" inclusive—have the famous self-locking UNBRAKO Socket Set Screw to assure positive positioning on the shaft.

Write for literature and the name of your nearest HALLOWELL distributor. STANDARD PRESSED STEEL Co., Jenkintown 14, Pa.

HALLOWELL POWER TRANSMISSION DIVISION

sps
JENKINTOWN PENNSYLVANIA

If you write maker identify as IEN - 2303

Progress - 1893-1954

In 1893, the first PEDRICK BENDER was made. That was during the same era when the costume on the left was in style. Here is the latest PEDRICK PRODUCTION BENDER which is as modern as the costume on the right. PEDRICK PRODUCTION BENDERS are now used for cold bending pipe, tube, reinforcing bars, angles and many intricate structural shapes.

PEDRICK PRODUCTION BENDER prices start as low as $1575.00 for the model "A-3"

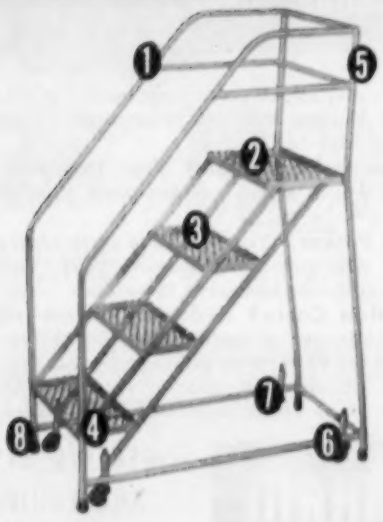
Write for descriptive folder.

PEDRICK TOOL & MACHINE CO.

3640 N. Lawrence St. Dept. 7 Philadelphia 40, Pa., U. S. A.

If you write maker identify as IEN - 2304

ONLY BALLYMORE Safety Step LADDERS GIVE YOU ALL THESE ADVANTAGES!



1. **GUARD RAILS** . . . Users feel safe up on Ballymore Ladders, surrounded by sturdy guard rails which *really* support and protect.
2. **SAFETY TREAD** . . . Special non-skid design provides sure footing all the way.
3. **SELF-CLEANING** . . . Treads can't clog with dirt, grease, or liquids.
4. **LIFETIME WEAR** . . . All welded-steel heavy-duty construction; no rivets or bolts, nothing to loosen or wear out.
5. **STRENGTH OF STEEL** . . . Tubular cross-section assures high strength with light weight.
6. **AUTOMATIC ACTION** . . . Just step on a Ballymore and it locks to the floor. No levers to pull, no wing nuts, no locks. Nothing to handle or think about. Acts for you.
7. **EASY PORTABILITY** . . . when you step off, ladder rolls easily on four large-diameter casters.
8. **MAXIMUM STABILITY** . . . Rubber-tipped feet at extremities of ladder eliminate any tendency to wobble, roll, or "kick out".
9. **COMPLETE RANGE OF SIZES** FROM ONE TO THREE STEP WITHOUT GUARD RAILS; TWO TO EIGHT STEPS WITH GUARD RAILS.

INSIST ON ORIGINAL

Safety Step LADDERS

Send for FREE Catalog
BALLYMORE COMPANY
WAYNE 4, PA.

Please send me my copy of full illustrated Ballymore Catalog showing complete line of original BALLYMORE ladders.

NAME_____
COMPANY_____
ADDRESS_____
CITY_____ ZONE____ STATE_____

If you write maker identify as IEN - 2306

CALCULATING . . Analog computer for research laboratory and office use

Source: REEVES INSTRUMENT CO.
215 E. 91st St., Dept. IEN, New York 28, N. Y.

Lightning fast

REAC Model C301 and C302 are new electronic computers measuring 20 by 25 by 20 inches. Both are designed to mount on a desk and are employed to solve differential equations or simulate physical systems to the sixth order. Operations are performed with accuracy tolerance to 0.1 per cent. Each instrument is completely self-contained with built-in supplies for its amplifier and its relay operation and an internal computing reference source.

Problems are set up on patch boards that plug into the front of the housing so one instrument can be used for several problems in succession with minimized set-up time. Model C301 has its components wired to the patch bay and problem control is obtained by patching computing elements through switches and relays. Model C302 has an integrated built-in problem control system so patching and operating of problems is the same as in the company's larger computers.

If you write maker identify as IEN - 2307

GRINDING . . Portable pneumatic tool drives mounted points at 40,000 rpm.

Source: ROTOR TOOL CO.
26300 Lakeland Blvd., Dept. IEN, Cleveland 23, Ohio

Bulletin 42

Rotor D-03 is a new air operated pencil die grinder weighing 13 oz. and operating at 40,000 rpm. Its main body measures 1 in. in diameter. Length is 5¾ inches. The spindle can be fitted with a ⅛ or ¼-in. collet to take the shanks of mounted points and small burrs. Drive is by a three-blade pneumatic motor, not a turbine. The spindle is mounted on ball bearings. Control centers at a sliding sleeve throttle. A tool post holder can be specified for fixed mounting.

If you write maker identify as IEN - 2308

Aluminum wedges that will not harm saw teeth are available in a range of sizes and types for use in connection with timber cutting. Dimensions range from 2¾ to 4 in. in width by 5½ to 10 in. in length. List price is about $11 to $46 per dozen. The wedge can be driven into position with a sledge. It is particularly useful in connection with chain saw operations. It is made by Foster Aluminum Alloy Products, 45 Pearl St., Dept. IEN, Forestville, N. Y.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 2309

The case of the arrested walnut . . . .

Not long ago there was a West Coast walnut grower faced with the problem of shaking a lot of arrested walnuts out of a lot of walnut trees.

With a note of perplexity in his voice, he asked us what to do, and we went to work with a CLEVELAND vibrator.

It gave those walnut trees a bad time . . . kept those walnuts moving like tomorrow's neighbor . . . and left the walnut grower beaming happily.

What's the problem in your case? Just tell us . . . or ask for our detailed literature.

Bin Stuck Lately? AIR *and* ELECTRIC

THE CLEVELAND VIBRATOR CO.

2736 Clinton Ave. • Cleveland 13, Ohio

If you write maker identify as IEN - 2310

FIT THIS

BALE BREAKER

INTO YOUR PRODUCTION LINE

Breaking out cotton linters at continuous high speed was the problem of one of this country's leading manufacturers of cellulose pulp.

Two Taylor-Stiles Type SF Bale Breakers were designed, built and fitted into the production line.

RESULTS—a steady flow of finely opened linters, at speeds synchronized to keep the digestors in continuous operation. In fact opening of the bales has become the key operation in the timing of the whole process.

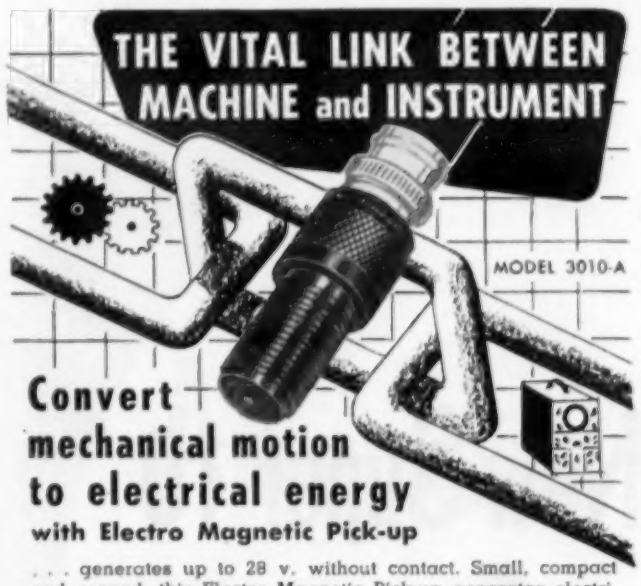
The operation is entirely automatic, from the moment the bales of linters are brought to the feed table of the TAYLOR-STILES BALE BREAKER.

Let us help you to solve your problem of opening almost any kind of bales

TAYLOR, STILES & COMPANY

44 BRIDGE STREET RIEGELSVILLE, NEW JERSEY

If you write maker identify as IEN - 2311



Convert mechanical motion to electrical energy

with Electro Magnetic Pick-up

. . . generates up to 28 v. without contact. Small, compact and rugged, this Electro Magnetic Pick-up generates electrical voltages proportional to the rate of speed of any object with magnetic properties. It produces useful output voltages at frequencies up to 75,000 cps. Self-energized by built-in magnet. Low cost permits use in production machinery.

A few of many applications

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- Acceleration and velocity studies
- For precision ignition timing
- For ballistic research

Electro ELECTRONIC EQUIPMENT

Write for Bulletin MT-592

ELECTRO PRODUCTS LABORATORIES

4501-IEu Ravenswood, Chicago 40

Canada: ATLAS RADIO CORP., LTD., Toronto

If you write maker identify as IEN - 2312

Budget Cut?

We Can Help You

Let us show you how to cut costs with the

Superior Model "AL" Honing Machine

Infinitely variable speeds from 250 to 1150 r.p.m. with tachometer. Quick, easy adjustment.

Smooth running, ball bearing, hardened spindle.

Foot-controlled, disc-type clutch and brake.

220/440 volt, ¾ h.p. ball bearing spindle drive motor. 1/50 h.p. centrifugal-type coolant pump.

Magnetic starters. Service light.

Accepts standard mandrels, 3/16" to 3", in the same spindle. No adapters required. Wide honing range of each mandrel cuts original costs.

No metal-to-metal contact to wear out mandrels as well as stones.

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Hones over keyways and splines with standard mandrels and stones.

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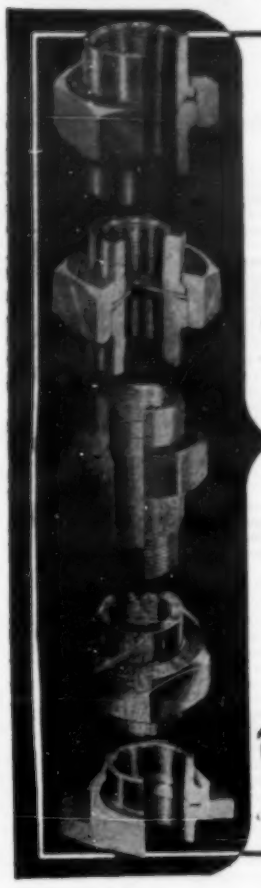
Please send free catalog on Superior Honing Machines

NAME_____
FIRM_____
STREET_____
CITY & STATE_____

If you write maker identify as IEN-2313



A TYPE FOR EVERY USE!

Catawissa PERFECT SEAL Unions

for all temperatures for all pressures!

Catawissa Unions are HOT FORGED from solid rectangular steel bars to give sure-fire piping dependability! Exclusive Ball-to-Angle seat design gives A PERFECT SEAL EVEN WITH PIPE NOT IN ALIGNMENT!

There's a Catawissa Union for every use, temperature and pressure . . . Standard and Double Extra Heavy; Orifice; Male & Female; Full Stainless, Full Alloy; Lug Nut. Choice of seats and socket weld or screwed ends.

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STOCKED BY LEADING INDUSTRIAL DISTRIBUTORS

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50 Mill St. • CATAWISSA, PA.

If you write maker identify as IEN-2314

THE TORRINGTON COMPANY
Specialties Division
900 Field Street, Torrington, Conn.

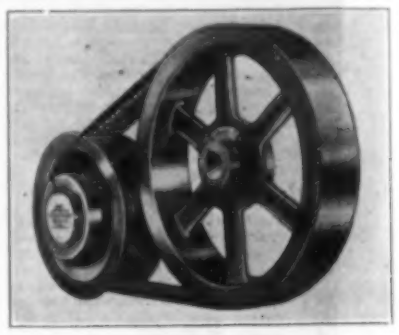
TORRINGTON SPECIAL METAL PARTS

Makers of Torrington Needle Bearings

If you write maker identify as IEN-2316

DRIVE . . Variable pitch sheave with solid companion sheave and V-belt

Source: T. B. WOOD'S SONS CO.
1200 Fifth Ave., Dept. IEN, Chambersburg, Pa.



Bulletin 796

New combination of variable pitch sheave, solid companion sheave and V-belt is available for Type-R and Type-W belts, measuring respectively $1\frac{5}{16}$ and $2\frac{3}{4}$ in. in width by $\frac{21}{32}$ in. in thickness. Two variable sheave sizes, for the Type-R belt, can be adjusted from 4.25 to 9 in. and 5.25 to 10 in. in maximum pitch diameter. Two sizes, for the Type-W belt, range from 5 to 10 in. and from 4.3 to 12.9 inches.

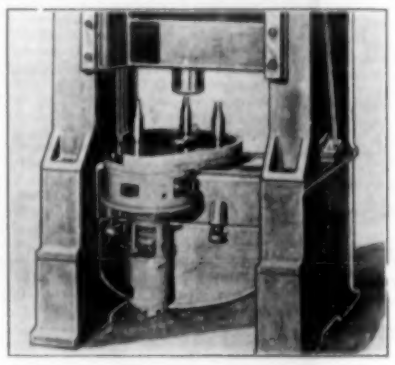
The two flanges slide axially on the hub and are held equally distant from center by means of a key and a double threaded screw. This screw is turned to position the flanges at a required pitch diameter. Then additional locking screws are turned in the clamping rings, on the sides of the flanges, to hold them in set position. Motor rating is 5 to 20 hp.

The companion sheave is available in a range of sizes from 8 to 40 in. in pitch diameter for both the Type-R and Type-W belts. The Type-R belt can be supplied in a number of pitch lengths between 59.9 and 169.22 inches. The Type-W belt ranges from 55.72 to 159.22 inches.

If you write maker identify as IEN-2317

PRESS TOOLS . . Indexing loader feeds work for stamping and forging

Source: HAUTAU ENGINEERING CO.
717 Wanda, Dept. IEN, Ferndale 20, Mich.



For specified use

Hautau-Turndex trade names a new indexing loader for application on a power press. It is interlocked with the ram so the latter will not come down unless the loader is indexed and locked in position. The index will not operate unless the ram is at the top of the stroke. A finished part is produced with each press stroke.

The unit shown is driven by a ½-hp. motor, clutch and gear reducer. It mounts a rotating table, 24 in. in diameter, and is known as Model 16-B. Production rate is 1,200 pieces per hour. This particular assembly rotates in a clockwise direction on a coining press tooled for the bodies of steel and copper rifle grenades. A finished body is removed from the right hand punch member and an unfinished part is manually loaded in its place. An auxiliary device, at the left hand punch position, forces the body over the punch. Coining takes place at the center. Each index is initiated by operating a push button in the clutch circuit.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN-2318

Durably made of quality stock . . . simple and easy to attach . . . can be fitted to any die in 10 to 15 minutes. Adaptable to blanking, progressive or compound dies and can be used on strippers 5/16 inch thick and up. Works well on either right or left hand feeds—or with light or heavy material. Provides long, trouble- free performance.

Pays for itself after a few short runs

Automatic Stop individually packed with Trip Spring and Mounting Screws ..... $2.50 each
Primary Stop ..... $6.50 doz.
(Discount for quantity orders)

For immediate delivery, mail orders to

DANLY MACHINE SPECIALTIES, INC.
2100 South Laramie Avenue, Chicago 50, Illinois

If you write maker identify as IEN-2319

Roll a NEW Floor OVER the old with

Abolish downtime due to floor failures. Just roll *Redi-Roll* over the old floor to a compacted ¼" thickness and USE AT ONCE. It's spark-proof! It's tough! It's industry's best floor buy. Write for details now . . . today!

ROCK-TRED Corporation
Manufacturers of a Complete Line of Building Maintenance Materials
7440-7450 North St. Louis Avenue • Skokie, Illinois
In Canada: Rock-Tred Corporation (Canada) Limited, Toronto 5

If you write maker identify as IEN-2320

WITH THE NEW

MICROCARD SYSTEM

SAVE TIME, SPACE AND EXPENSE

18,600 FULL SIZE RECORDS FILL 31 (4-DRAWER) FILES

AT A COST OF ABOUT $6,400.00

IN MICROCARD FORM THESE RECORDS CAN BE STORED IN ONE SMALL CARD FILE

AT A COST OF ABOUT $400.00

Spend pennies now where dollars were disappearing! New MICROCARD SYSTEM is the economical, quick to find, read, and refile method of record storage. Figures available on your industry application.

WRITE TODAY
For Complete Information

MICROCARD CORP. • READER DIVISION
Box 314D • La Crosse, Wisconsin
Arrangements made with Kodak Ltd. of England to produce a similar reader

If you write maker identify as IEN-2321

they're SELF-LOCKING

IN ANY POSITION

on a threaded member

FLEXLOCS stay put in any position on a bolt or stud the moment the locking threads are fully engaged; they do not have to be seated. And FLEXLOCS stay tight, no matter how severe the vibration; are one piece, all metal; can be used repeatedly. One nut covers a temperature range up to 550°F. Call upon your local industrial distributor for literature and samples or write STANDARD PRESSED STEEL CO., Jenkintown 14, Pa.

FLEXLOC LOCKNUT DIVISION

SPS
JENKINTOWN PENNSYLVANIA

If you write maker identify as IEN - 2322

INSTANT SETTING CONCRETE FLOOR PATCH

TEST IT ON TRIAL OFFER

TOUGH AS NAILS! FAST!

Repair broken factory floors without the usual traffic tie-up. Simply shovel INSTANT-USE into hole or rut — tamp smooth — truck over! No waiting! INSTANT-USE bonds tight to old concrete — right up to a feather edge. It's tough. Wears like iron. Won't crack or crumble. Install complete overlay where floors are badly chewed up. Used indoors or out. Immediate shipment.

MAIL COUPON for TRIAL OFFER and FREE HANDBOOK

INSTANT-USE

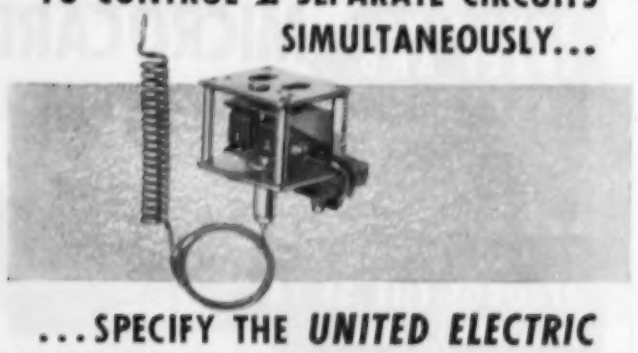
FLEXROCK COMPANY (Offices in principal cities)
3606-Z Filbert St., Philadelphia 1, Pa.

Please send me complete INSTANT-USE information, details of TRIAL ORDER PLAN and HAND BOOK OF BUILDING MAINTENANCE—no obligation. (Clip and attach Coupon to Company letterhead).

Name .....
Title .....
Company .....
Address .....

If you write maker identify as IEN - 2323

TO CONTROL 2 SEPARATE CIRCUITS SIMULTANEOUSLY...



...SPECIFY THE *UNITED ELECTRIC* TYPE F43A DUAL SWITCH THERMOSTAT

This precision-built temperature control is available with a wide variety of thermal assemblies and switches for use between −150° F and +600° F. It is used to control two separate circuits simultaneously—as in air conditioning systems where a two stage compressor control is required. Especially suitable for installations in water baths, industrial ovens, hot plate presses, coffee roasters and heating equipment.

Switch Ratings: 15 amps at 115 or 230 volts A.C.—D.C. or 20 amp. A.C. switches available on specification. Write for bulletin #3-4.

UNITED ELECTRIC CONTROLS COMPANY
80 School Street, Watertown, Mass.

STANDARD & SPECIAL THERMOSTATS & PRESSURE SWITCHES

If you write maker identify as IEN - 2324

This New Catalog Tells You

HOW TO SOLVE PUMPING PROBLEMS *with* AUTOMATIC REVERSING PUMPS

Ask for TUTHILL CATALOG NO. 105

If you have the problem of driving a pump from a reversing shaft without changing direction of flow or port positions, you will find the answers you need in this new Tuthill Catalog on Automatic Reversing Pumps. It provides concise data on pumps for lubrication, coolant, hydraulic and circulating service, in capacities up to 200 g.p.m. and pressures to 400 p.s.i. Write for Catalog No. 105 today.

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Dependable Rotary Pumps since 1927
939 East 95th St., Chicago 19, Ill.

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FEBRUARY 1954

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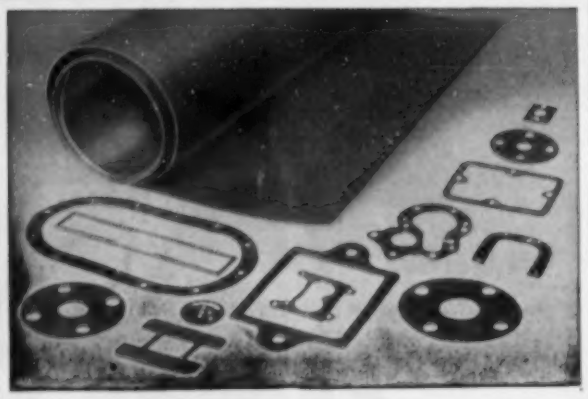

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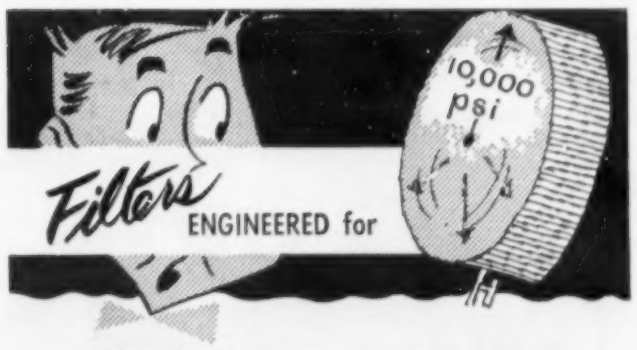

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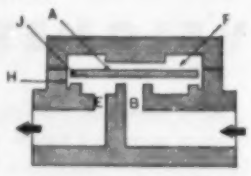

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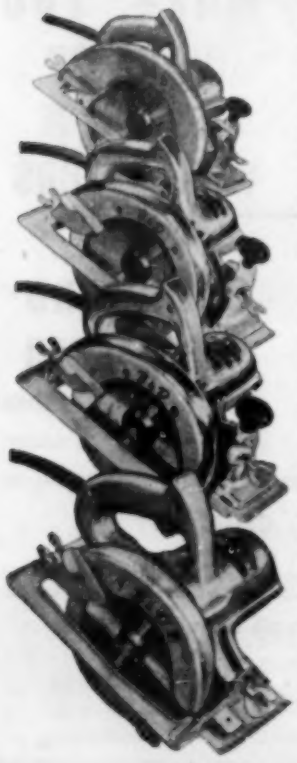

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NEW PRODUCT . . "I wish we had contact with a manufacturer interested in taking over manufacturing and sales of a surface grinding machine that has been on the market for the past 35 years. We are located in Chicago." **IEN W-16**

SURPLUS . . "I wish we had a buyer for 1,025 ft. of seamless brass tube 3 in. inside by 0.095 in. wall in 17 to 20 ft. mill length weighing 3.4 lb. per foot, also 250 ft. of seamless steel tube 3 in. inside by 3¼ in. outside. Both stocks are located in Sanford, N. C." **IEN W-17**

SURPLUS . . "I wish we had a purchaser for 800 ft. of 5/16-in. inside diameter white rubber tubing. It measures 1/16 in. in wall thickness and is in 52-ft. lengths. The stock is in storage in Fort Wayne, Ind." **IEN W-18**

SURPLUS . . "I wish I had a buyer for all or part of a surplus stock of Ingersoll Rand jack bits. The stock includes 1033 units measuring 1⅞ in. Type I, 1088 units of 2 in. Type I and 6332 units of 2⅛ in. Type I Sibley. The stock is in Kellogg, Idaho." **IEN W-19**

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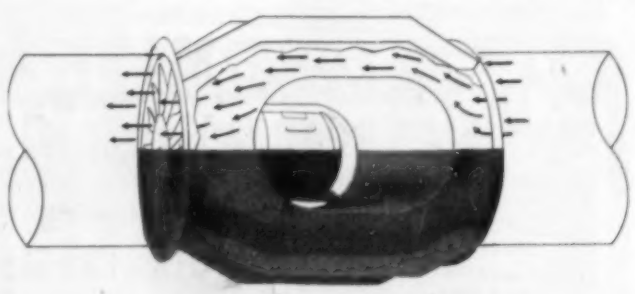

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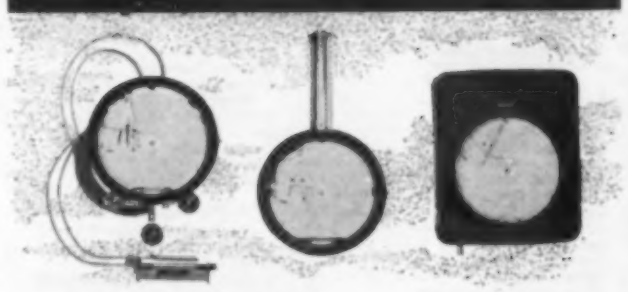

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